SENGAMALA THAYAAR EDUCATIONAL TRUST WOMEN'S COLLEGE (AUTONOMOUS)

SUNDARAKKOTTAI, MANNARGUDI – 614 016, TIRUVARUR (DT), TAMIL NADU.

NATIONAL CONFERENCE ON
"EMERGING TRENDS IN ARTIFICIAL INTELLIGENCE"
(NCETAI-2024)

19.02.2024 & 20.02.2024
ABSTRACTS

LET'S TALK ABOUT
THE FUTURE

ORGANIZED BY
PG & RESEARCH DEPARTMENT OF COMPUTER SCIENCE

SENGAMALA THAYAAR EDUCATIONAL TRUST WOMEN'S COLLEGE (AUTONOMOUS)

(SILVER JUBILEE INSTITUTION)

(Affiliated to Bharathidasan University, Tiruchirappalli)

(Accredited by NAAC & An ISO 9001:2015 Certified Institution)

SUNDARAKKOTTAI, MANNARGUDI - 614 016.

THIRUVARUR (Dist.), TAMIL NADU, INDIA.

Phone: 04367-255423

Website : www.stet.edu.in

NATIONAL CONFERENCE
ON
EMERGING TRENDS IN ARTIFICIAL INTELLIGENCE
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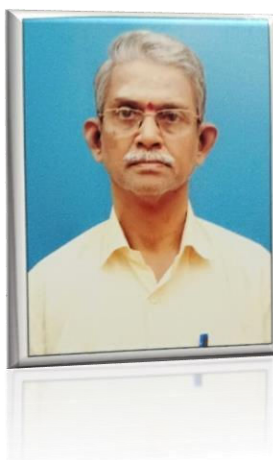# IN ASSOCIATION WITH IQAC

ABOUT THE INSTITUTION

Empowering the women is empowering the nation. Higher education, especially to women, empowers not only the family but also emphasized as a mission of capacity building ofthe nation. The significance of this aspect has been rightly recognized and there has been a paradigm shift in the scenario ofwomen education in the urban. Nevertheless higher education towomen in the rural area needs encouragement, because the main source of income is agriculture and per capita income is relatively very low. In this context, Sengamala Thayaar Educational Trust Women's College was established at Sundarakkottai, a hamlet in Thiruvarur district, in the year 1994 by Shrimathi Krishnaveni Vivekanandham, who entrusted the task of nurturing the institution to her illustrious son Dr.V.Dhivaharan now as the Correspondent with yonder vision for promoting higher education to women students in this downtrodden area. The institution offers 12 UG, 13 PG, 5 M.Phil, 4 Ph.D. and PG Diploma course. Sengamala Thayaar Educational Trust Women's College is recognized as one of the foremost educational institutions in India, affiliated to Bharathidasan University, Tiruchirappalli. It has been accredited by NAAC and it is an ISO 9001:2015 Certified Institution. The institution has attained Autonomous in the year 2019-2020. The Internal Quality Assurance Cell (IQAC) of the College is extremely active to achieve the goal of the institution.

ABOUT THE DEPARTMENT

Our Department established in the year 1994 with the course B.Sc. We offer other programmes such as M.Sc., computer science, M.Sc., Information Technology and we started research programmes M.Phil & Ph.D started from 2011. Our department going to start a new programme B.Sc., Artificial Intelligence from the next academic year. So far we have produced 3,280 Undergraduates, 1306 Postgraduates,109 M.Phil Scholars, and 9 Ph.D., Scholars. We produced 516 University Ranks and 20 Gold Medals. At present our department students strength is 587. Department Laboratories are well equipped recent technologies. Faculty Members have been regularly presenting papers in an international and national conference and publishing papers in International and National journals with high impact factor. The department organize conference, seminars, Guest lectures, Workshops, Hands on training and Extension activities frequently we got institutional membership for ICT Academy and by using the same, the student and staff membership have been getting various opportunities for academic enrichments and conduction of Technical sessions frequently. Department has received research projects from Tamil Nadu State Council for Science and Technology (TNSCST) and received funds from various NGO's. The staff and students of our department contributed the college by developing software like Language software LearnDiff and Feedback software etc…

FELICITATION ADDRESS

I consider it to be a great honour to be a part of the inaugural session of this National Conference on ***"Emerging Trends in Artificial Intelligence (NCETAI=2024)"*** conducted by the PG & Research Department of Computer Science in association with IQAC, STET Women's college, known for its yeomen services in the field of higher education for women and women empowerment. First of all, I would like to congratulate The Department of Computer Science and the Organizing Committee for organizing this National Conference, which has great potentials for advancement of research in the current and fast developing field of Artificial Intelligence, which is going to rule the world in future.

The idea of 'a machine that thinks' dates back to ancient Greece. But since the advent of computers, the evolution of artificial intelligence starts back to 1950, when Alan Turing published *Computing Machinery and Intelligence* wherein he proposes to answer the question "can machines think?" and "systems that act like humans." Turing introduced a test "the Turing Test" to determine if a computer can demonstrate the same intelligence as a human. In 1956 John McCarthy coined the term 'artificial intelligence' at the first-ever AI conference at Dartmouth College. Since then this filed has undergone tremendous development.

Artificial intelligence leverages computers and machines to mimic the problem-solving and decision-making capabilities of the human mind. The AI combines computer science and robust datasets, to enable problem-solving. It also encompasses sub-fields of machine learning and deep learning, which are frequently mentioned in conjunction with artificial intelligence. These disciplines are comprised of AI algorithms which seek to create expert systems which make predictions or classifications based on input data.

Over the years, artificial intelligence has gone through many cycles of hype, but even to skeptics, the release of OpenAI's ChatGPT seems to mark a turning point. There are numerous, real-world applications of AI systems today such as Speech recognition, Customer service s such as Online virtual agents, Computer vision, Recommendation engines, Automated stock trading etc. Today, AI technology is widely used throughout industry, government, and science.

Even though the applications for this technology are growing every day and the hype around the use of AI in business takes off, there are conversations around it ethics which are also critically important.

However, one can conclude that today's challenges faced by academia and industry are so complex that they can only be solved through the help of AI. I hope that this conference will address these by discussing the recent trends and developments in the broad topics of AI to promote exchange of ideas in various applications of AI in science and engineering that are intended to upgrade the existing knowledge in research and create deeper interest in various disciplines. Furthermore this conference will provide opportunity to young researchers to learn the current state of research & techniques, develop sound presentation skills and attitudes necessary to pursue further research in AI and its applications to the participants. Congratulations and all the Best.

Dr. K.THIYAGESAN

PRESIDENTIAL ADDRESS

Ladies and gentlemen,

Distinguished guests, scholars, researchers, and participants,

I extend a warm welcome to each one of you at the National Conference on Emerging Trends in Artificial Intelligence (NCETAI-2024). As the President of this remarkable gathering, I feel a deep sense of honour and responsibility to address you today. Our collective presence here, organized by the PG & Research Department of Computer Science in collaboration with the Internal Quality Assurance Cell (IQAC) of Sengamala Thayaar Educational Trust Women's College, signifies not only the commitment to academic excellence but also the celebration of a significant milestone – the silver jubilee of our esteemed institution.

The theme of this conference, "Emerging Trends in Artificial Intelligence," resonates with the dynamism and evolution characterizing the field. Artificial Intelligence has become an integral part of our lives, shaping industries, economies, and societies. In the Indian context, we are witnessing a transformative journey, with AI playing a pivotal role in various sectors.

India has emerged as a hub for AI research, development, and innovation. The government's initiatives, such as the National AI Strategy, are indicative of a concerted effort to position the country as a global leader in AI. The emphasis on research and development, skill enhancement, and the creation of a conducive ecosystem has propelled India into the forefront of the AI landscape.

Recent AI cases in India illustrate the diverse applications and the potential impact of this technology. From healthcare to agriculture, AI is making significant strides. In healthcare, AI algorithms are aiding in early diagnosis and personalized treatment plans. The integration of AI in agriculture is optimizing crop yield predictions, resource allocation, and sustainable farming practices. These instances reflect not only the technological advancements but also the positive socio-economic implications of AI adoption.

However, as we embrace the promises of AI, we must also be mindful of the challenges and ethical considerations. The recent AI case involving bias in facial recognition algorithms serves as a stark reminder of the importance of responsible AI development. Ensuring fairness, transparency, and accountability in AI systems is imperative to mitigate potential harms and promote trust among users.

As we navigate through the rich tapestry of presentations and discussions over the next few days, let us collectively explore the emerging trends in AI, keeping in mind the unique perspectives and opportunities in the Indian context. Our diversity, cultural richness, and interdisciplinary collaborations can contribute to innovative solutions that address local challenges while contributing to the global discourse on artificial intelligence.

To the young minds and researchers present, I encourage you to immerse yourselves in the wealth of knowledge that will be shared during this conference. Your contributions are vital to shaping the future of AI in India and beyond. Seize this opportunity to network, collaborate, and foster partnerships that will drive innovation and positive change.

In conclusion, I express my gratitude to the organizers, sponsors, and everyone who has played a role in making NCETAI-2024 possible. Let us embark on this intellectual journey with enthusiasm, curiosity, and a shared commitment to advancing the frontiers of artificial intelligence.

Thank you, and I wish you all a fruitful and engaging conference.

Dr.M.V.SRINATH

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SUNDARAKKOTTAI, MANNARGUDI-614 016, TAMILNADU, S.INDIA
PG and Research Department of Computer Science

PREFACE

Dr. V. GEETHA, M.Sc., M.Phil., B.Ed., Ph.D.,
Associate Professor & Head,
PG & Research Department of Computer Science

On behalf of the organizing committee, I would like to cordially welcome you to the National conference on "Emerging Trends in Artificial Intelligence (NCETAI – 2024) ". It is a real honor and pleasure to welcome all, who are looking for a well-established and prestigious forum to communicate and disseminate the innovative advances of their research.

Artificial Intelligence(AI) is the transformative technology of our era and the next step in evolution of cognition. Artificial intelligence is a branch of computer science that aims to create intelligent machines. It has become an essential part of the technology industry. Research associated with Artificial Intelligence is highly technical and specialized. Artificial Intelligence enhances the speed, precision, and effectiveness of human efforts.

The current trends in AI include a wide spectrum of technologies such as Natural Language Generation, Speech Recognition, Virtual Agent, Robotic Process Automation, Deep Learning Platforms and so on. These AI trends drive sustainable growth for businesses across industries, redefining the way we work, learn, and interact with technology

Artificial intelligence is revolutionizing various sectors of health, enterprises, businesses, and the commercial sector with its smartness. Therefore, high-level events discussing solutions, trends, and the future are crucial. The NCETAI - 2024 will focus on software, applications, medical uses, solutions, trends, and more

It is a fact that AI is continuously digging its way in a vast number of diverse scientific domains. "NCETAI – 2024" aims to provide a forum for delegates from both academia and industry, who wish to share pioneer ideas, to get to know each other better and to present their research. Moreover, it aims to offer a deep glimpse into the future and to examine important AI ethical aspects. Genuine peer and expert reviews, appreciation, and recognition can take research a long way.

 I hope that this Special Issue will increase the understanding of the emerging trends of Artificial Intelligences, and I would like to thank the authors for their valuable contributions, which support the scientific progress of Artificial Technology. We are trying our best to ensure that your time in the college during the conference is one of the most memorable one and you go back with rich information and as a proud AI Scientist of the NCETAI world . I thank every one of you who are contributing to the success of the conference and looking forward to see you all soon.

HEAD OF THE DEPARTMENT
PG and Research Department of
Computer Science
S.T.E.T Women's College (Autonomous)
MANNARGUDI.

Prof. A. PADMAPRIYA
Head i/c

I am delighted to be part of this National Conference on Emerging Trends in Artificial Intelligence (NCETAI 2024) – organized by PG & Research Department of Computer Science, Sengamala Thayaar Educational Trust Women's College (Autonomous), Sundarakkottai, Mannargudi. The Conference is aimed to exchange information relating to Intelligent systems and its applications in Industry. The key areas of discussion in this conference are Computational Intelligence, Data Science & Analytics, IoT and Robotics, Telecommunications & Applications.

Through this program academicians, scientists, engineers and professionals from different universities and academic institutions, R&D organizations and industrial concerns will get the opportunity to interact, exchange ideas, knowledge, and views for enhancing collaborations. In the current scenario, it is important to network and extend cooperation to realize our potential and use the diverse talents available in our people. By interacting with the academicians and the professionals, all should mutually be able to enhance their knowledge of the state-of-the-art technology as well as the industry needs.

I congratulate all the participants of this virtual event. Get ignited and make best use of this opportunity. Also, I would like to thank wholeheartedly the Patrons, Advisors, Convenors and Organizing Committee members for their efforts and contributions to make this wonderful event happen.

23.01.2024

I extend my hearty congratulations to Sengamala Thayaar Educational Trust Women's College for successfully conducting the National Conference on Emerging Trends in Artificial Intelligence.

It is a great occasion and remarkable platform that brings together brilliant minds, passionate researchers and industry experts from various corners of the nation to explore into the area of cutting- edge technologies. The efforts invested by the organizers in making an event of this magnitude deserve immense appreciation.

Emerging Trends in Artificial Intelligence have transfoemed as the driving forces behind revolutionary advancements in numerous domains. By fostering knowledge exchange, stimulating discussions and showcasing groundbreaking research, this conference has undoubtedly played a pivotal role in shaping the future of these fields.

I would like to extend my deepest appreciation to the distinguished keynote speakers, panelists and presenters whose expertise and insights have illuminated the path toward progress. Their invaluable contributions have undoubtedly inspired the audience and ignited a spark of curiosity and innovation which is undoubtedly the exact force of progress.

Through this conference of emerging trends in Artificial Intelligence, let us reflect on the incredible strides made in these fields and channel our collective efforts towards exploring new frontiers and overcoming future challenges not only in these fields but also the various aspects in Information Technology and human life as a whole.

Once again, congratulations to the management and organisers for arranging such a remarkable event. Your dedication to promoting knowledge, fostering innovation, and shaping the future is truly commendable. Definitely it will have positive impacts in the near future in multi dimensional manners.

Best wishes for continued success in all your future endeavors. May God Bless all of us abundantly.

Sincerely,

Dr. JOHN T. ABRAHAM
PhD,MCA,MSc(ISM),MPhil,MTech(IT)
Head of the Department
Department of Computer Science
Bharata Mata College Thrikkakara
Kochi, Kerala - 682 021

PG & RESEARCH DEPARTMENT OF COMPUTER SCIENCE

Ref. No.

Date :
8th February 2024.

Dr. K. Palanivel, M.Sc., M.Phil., Ph.D., (NET.)
Associate Professor of Computer Science
(Subject Expert in NCETAI-2024)

MESSAGE

Sengamala Thayaar Educational Trust Women's College has certainly came a long way and has provided educational platform to innumerable women students who are enthusiastic to accomplish their dreams and ambition especially from the village background. National or International conferences are very significant in the development and growth of an Institution.

As the Subject Expert of "National Conference on Emerging Trends in Artificial Intelligence (NCETAI-2024)" organized in the Department of Computer Science of STET Women's College on 19 & 20th February 2024, I congratulate and convey my wishes to the Management, the Organizers of this conference and the Faculty members of Department who dedicatedly involved in this conference.

I am delighted to note that the accepted papers are being published in an ISBN-Edited Volume. I wholeheartedly appreciate all the sincere efforts of the entire team of the conference.

I feel very proud that this conference definitely would develop and promote the research at a higher level in the field of Computer Science, especially in Artificial Intelligence.

I hope this conference will hold a series of intellectually interactive sessions and intensive deliberations by scholars and technical experts participating in it. This Conference will be the eye opener for the researchers, students and faculty to show the various avenues in the field of Computer Science.

My best wishes to this noble endeavour of Department of Computer Science of STET Women's College. I wish the conference a grand success.

(K. Palanivel)

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IN ASSOCIATION WITH IQAC
ORGANIZING COMMITTEE

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Research Advisor

PG and Research Department of Computer Science

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Sundarakkottai, Mannargudi- 614016, Thiruvarur(Dt), Tamil Nadu. South India.

ICTACADEMY

A TWO DAY
NATIONAL CONFERENCE ON EMERGING TRENDS IN ARTIFICIAL INTELLIGENCE (NCETAI - 2024)

ORGANIZED BY
PG AND RESEARCH DEPARTMENT OF COMPUTER SCIENCE IN ASSOCIATION WITH IQAC

VENUE : CONFERENCE HALL, VIVEKANANDHAM BLOCK

DAY I - 19.02.2024

INAUGURAL SESSION (10.00 a.m - 11.00 a.m)

TAMIZH THAI VAZHTHU

LIGHTING THE LAMP : DIGNITARIES

WELCOME ADDRESS : Dr. V. GEETHA, ASSOCIATE PROFESSOR & HEAD, DEPARTMENT OF CS

HONOURING & RELEASING THE ABSTRACT

PRESIDENTIAL ADDRESS : Dr. M.V. SRINATH, RESEARCH ADVISOR, DEPARTMENT OF CS

INAUGURAL ADDRESS : Dr. N. UMA MAHESWARI, PRINCIPAL, STET WOMEN'S COLLEGE (AUTONOMOUS)

FELICITATION ADDRESS : Dr. K.THIYAGESAN, ACADEMIC ADVISOR, STET WOMEN'S COLLEGE (AUTONOMOUS)

CHIEF GUEST INTRODUCTION : MS.R. MANJUPARGAVI, ASSISTANT PROFESSOR, DEPARTMENT OF CS

KEY NOTE ADDRESS : Dr. MANIKANTAN POONKUNDRAN, DIRECTOR & CLIENT ENGAGEMENT LEADER, CAPGEMINI LTD, CHENNAI

TEA BREAK (11.00 a.m to 11.20 a.m)

CHIEF GUEST INTRODUCTION : MS.V. MANGAIYARKARASI, ASSISTANT PROFESSOR, DEPARTMENT OF CS

INVITED LECTURE I : Dr. JOHN T. ABRAHAM , PROFESSOR, BHARATA MATA COLLEGE, ERNAKULAM
(11.20 a.m to 12.00 p.m)

TECHNICAL SESSION - I - PAPER PRESENTATION (12.00 p.m to 1.00 p.m)

LUNCH (1.00 p.m to 2.00 p.m)

TECHNICAL SESSION - II - PAPER PRESENTATION (2.00 p.m to 3.00 p.m)

DAY II - 20.02.2024 (10.00 a.m)

WELCOME ADDRESS : Ms. K.SAVIMA , ASSISTANT PROFESSOR, DEPARTMENT OF CS

CHIEF GUEST INTRODUCTION : MS.R. AKILANDESWARI, ASSISTANT PROFESSOR, DEPARTMENT OF CS

INVITED LECTURE II : Mr.M. SIVA SANKAR , ASSOCIATE INFORMATION SECURITY CONSULTANT,
(10.15 a.m to 11.15 a.m) QSEAP INFO TECH PVT LIMITED, BANGALORE

TEA BREAK (11.15 a.m to 11.30 a.m)

TECHNICAL SESSION - III - PAPER PRESENTATION - (11.30 a.m to 1.00 p.m)

LUNCH (1.00 p.m to 2.00 p.m)

VALEDICTORY SESSION (2.00 p.m to 3.00 p.m)

WELCOME ADDRESS : MS.C. JASMINE, ASSISTANT PROFESSOR,
DEPARTMENT OF CS

VALEDICTORY ADDRESS : Dr. A. PADMAPRIYA, PROFESSOR,
DEPARTMENT OF COMPUTER SCIENCE,
ALAGAPPA UNIVERSITY, KARAIKUDI

REPORT OF THE CONFERENCE: Ms. N.SUBHALAKSHMI,
ASSISTANT PROFESSOR, DEPARTMENT OF CS

CERTIFICATE DISTRIBUTION

VOTE OF THANKS : Dr. R. ANITHA, ASSOCIATE PROFESSOR,
DEPARTMENT OF CS

NATIONAL ANTHEM

CONTENT

ABS No. NCETAI-2024:001 PROVISIONING COMPUTATIONAL RESOURCES FOR ONLINE BASED E-LEARNING PLATFORMS USING DEEP LEARNING TECHNIQUES

DR. V. GEETHA,
Head and Associate Professor, PG and Research Department of Computer Science, Sengamala Thayaar Educational Trust Women's College (Autonomous), Sundarakkottai**.**

Research focus on E-learning, or numeral erudition receipts convert gradually prevalent in current eons as a method to distribute erudition plus preparation using numeral skills besides the intranet. Provision organization provision aimed at e- learning takes enthused on the online. For the purpose, that effectual provisioning of the possessions aimed at such platforms. This project offerings an archetypal for forecasting the rocess of computational possessions for the e-learning podiums Legislative Classification, Deterioration Procedure there are castoff of this provisioning computational possessions on behalf of online-based e-learning podiums consuming deep learning techniques. Cutting-edge this both pupil performed an arrangement of the activities same a theory besides real-world while linked toward server and application. In this offered perfect achieves high accuracy. The imminent new impression on this mission is open, interoperable e-learning gateway construction (OEPortal), consuming e-learning schemes incorporation expertise to the rocess isti running test consequences display that to the pupils can browse resources over their mobile terminal devices. Aimed at this unfathomable erudition methods stay castoff this application achieves to the predictable design goals, besides this one stays conductive to improving that excellence the coaching E-learning scheme incorporation expertise designed at races, workflows, demonstrations besides the real-world lab. This E- learning podium helps near conjecture to the slow apprentices in particular domain besides of recommend to give more importance proceeding the respective domain

Keywords: Electric Appliances, Channel Controlling, Bluetooth, Random Forest, Supervised Technique

ABS No. NCETAI-2024:002 A COMPREHENSIVE SURVEY OF EXISTING MACHINE LEARNING AND DEEP LEARNING APPROACHES IN HEALTHCARE PREDICTION

Dr. R. ANITHA[1], Dr. K. SHARMILA [2] , Dr. R. DEVI [3]
[1]Associate Professor, PG and Research Department of Computer Science, Sengamala Thayaar Educational Trust Women's College (Autonomous), Sundarakkottai.
[2](Corresponding Author), Associate Professor, Department of Comp. Science, VISTAS.
[3] Associate Professor, Department of Comp. Science, VISTAS.

Recent advancements in Artificial Intelligence (AI) and Machine Learning (ML) technology have brought on substantial strides in Healthcare predicting and identifying health emergencies, which has been a significant factor in saving lives in recent years. Both artificial intelligence (AI) and machine learning (ML) have made significant strides in the field of medicine, which is one of those industries. The term "artificial intelligence" is commonly used to refer to computer programmes thatimitate and simulate human intelligence (AI). One of the subfields that fall under the umbrella of artificial intelligence is referred to as "machine learning" (AI). Therefore, this paper aims to present a comprehensive survey of existing machine learning and deep learning approaches utilized in healthcare prediction and identify the risk and challenges of ML application to healthcare such as

system privacy and ethical concerns and provide suggestions for future applications to applying these approaches in the healthcare domain.

Keywords: Machine learning, Healthcare, Artificial Intelligence (AI), Human Intelligence

ABS No.NCETAI-2024:003 BUILDING A FINGERPRINT RECOGNITION STRUCTURE AS A SECURITY MECHANISM TO VERIFY THE IDENTITIES OF USERS IN CLOUD ENVIRONMENT THROUGH MODIFIED ARTIFICIAL NEURAL NETWORK

R. MANJUPARGAVI [1] ,   Dr.M.V.SRINATH [2]

[1]Research Scholar,
[2]Research Supervisor, S.T.E.T Women's College (Autonomous), (Affiliated to Bharathidasan University, Tiruchirappalli)Sundarakkottai, Mannargudi – 614016, Thiruvarur Dt., Tamil Nadu, India.
Email: mprithishni5@gmail.com

Cloud computing is a rapidly expanding field in Information and Communication Technology (ICT) that provides storing, access, and execution of data, programmes, and other information associated services over internet. Data security, information reliability and accessing information by unrecognizable individuals have all been problems with cloud data storage. Although data distribution and storage across several users is very accessible and cost-effective, it causes data idleness and security fears. Nevertheless, designing a security approach that employs fingerprint recognition to identify people before they use cloud-based services is the goal of this project. Fingerprint recognition or fingerprint authentication refers to the automated methods of certifying a match between two human fingerprints. Fingerprints are unique, trustworthy, and relatively easy to obtain, this research investigates fingerprint recognition for in-person identification. The Gabor Filters process, segmentation of the ridge region, normalization, morphological thinning, and estimate of the local orientation of ridges in a fingerprint are all used in fingerprint identification image enhancement approaches. In this study, a fingerprint recognition model centered on a Modified Artificial Neural Network (MANN) with a back propagation structure and Artificial Neural Network (ANN) classification based minutiae at two levels is recommended in a cloud- distributed system to the required users to give access authorization while reducing data redundancy. This allows the desired individual to access cloud data with the permission of an authorized user. When compared to current methods, the suggested design performed considerably better on the National Institute of Standards and Technology (NIST) and Bruker DALtonics (BDAL) databases, with an acceptance rate of 95.3% and 94.3% respectively.

Keywords: Fingerprint recognition, Cloud, Security, Authentication, Minutiae

ABS No.NCETAI-2024: 004 A SECURE ELECTRONIC HEALTH FRAMEWORK TO PROTECT HEALTH RECORDS USING NATURAL LANGUAGE PROCESSING WITH MULTI LEVEL DATA ENCRYPTION IN CLOUD

N. SUBHALAKSHMI [1] , Dr.M.V.SRINATH [2]

[1]Research Scholar,
[2]Research Supervisor,S.T.E.T Women's College (Autonomous), (Affiliated to Bharathidasan University,Tiruchirappalli)Sundarakkottai, Mannargudi – 614016, Thiruvarur Dt., Tamil Nadu, India.
Email :subha.stet@gmail.com

Big data is a set of a massive quantity of large datasets with data volume. With the growing number of data, the demand for big data storage will increase. By setting the records inside the cloud, that data is to be available to anybody from anywhere. Cloud computing is an evolving, carrier-centric framework for performing distributed and parallel computing on large datasets. As the benefits of cloud computing increase in terms of cost, storage space, and scalability, all data providers and institutions are also focusing on offloading data from local servers to remote cloud servers. Medical records are essential and most important because the government retains additional data on the medical history of the data and medical professionals can provide the most appropriate and effective remedies or support for their concerns. It is also useful for diagnosing viable illnesses, identifying family hereditary and possible illnesses, allergic reactions, past and present dosing, and vaccination statistics. The proposed work aims to develop a three-tier framework to protect the privacy of records stored in big data environment and analyses the document about the protected text and breaks the protected content into separate documents. This research work categorizes, distributes, and stores health-related content using a combination of Natural Language Processing (NLP) and text mining algorithms. After associating the distributed content with the original parent document, it encrypts the attribution information of the patient's history and saves in the clouds for future.

Keywords: cloud computing, big data, encryption, Natural Language Processing (NLP), patients' history

ABS No.NCETAI-2024:005 DEVELOPING NEXT GENERATION CAMPUS USING IOT DEVICES WITH ENHANCED SECURITY

K.SAVIMA[1] , Dr.M.V.SRINATH[2]

[1]Research Scholar,
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With the advent of IoT, and smart technologies evolving rapidly, many campuses are recognizing their significance in optimizing student and faculty success. The number of IoT connected devices is expected to skyrocket to over 75 billion by 2025. Today, connected devices, cameras, sensors, and machines – all embedded with smart technology – are increasingly used on campuses throughout the nation. So much so that we are starting to call some of them smart campuses. Similarto smart cities, a smart campus utilizes smart technologies to create new experiences and services. These smart technologies, which are connected to the Internet and AI-driven – can improve various aspects of the student and faculty experience on campus such as:
Enhancing the financial aid process
Improving student services
Reducing wait times
Mitigating compliance mistakes
Reducing human errors
Automating workflows
Conserving energy and resources

Keywords : Artificial Intelligence, IoT, Sensor, Cryptography, Smart Campus

ABS No.NCETAI-2024:006 HYBRID GENERAL ADVERSARIAL NETWORK(HGAN) FOR CLOUD WORKLOAD PREDICTION AND TREND CLASSIFICATION

V.MANGAIYARKARASI

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Hybrid generative adversarial network (HGAN) for which we can enforce data density estimation via an autoregressive model and support both adversarial and likelihood framework in a joint training manner which diversify the estimated density in order to cover different modes. I proposeto use an adversarial network to \textit {transfer knowledge} from an autoregressive model (teacher) to the generator (student) of a GAN model. Efficient resource management approaches have become a fundamental challenge for distributed systems, especially dynamic environment systems such as cloud computing data centers. These approaches aim at load-balancing or minimizing power consumption. Due to the highly dynamic nature of cloud workloads, traditional time series and machine learning models fail to achieve accurate predictions. In this paper, we propose novel hybrid VTGAN models. Our proposed models not only aim at predicting future workloads but also predicting the workload trend (i.e., the upward or downward direction of the workload). Our results show that VTGAN models outperform traditional deep learning and hybrid models, such as LSTM/GRU and CNN-LSTM/GRU, concerning cloud workload prediction and trend classification.

Keywords: Density, Autoregressive model, Dynamic environment, Cloud workload

ABS No.NCETAI-2024:007 PREDICTION OF DIGITAL CURRENCY ETHEREUM PRICES USING DATAANALYTICS

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Cryptocurrency is a technology in which a digital asset work as a medium of exchange wherein the ownership records are stored in a ledger existing in a form of computerized database using strong cryptographic techniques. Due to the high volatility and price fluctuations, it is really difficult for the investors to forecast even the next day prices of the Digital Currency such as Bitcoin, ripple, rocess , rocess classic, lite coin, etc. Though many types of virtual currencies exist, Next to Bitcoin, rocess has a greater acceptance from different bodies such as investors, researchers, traders, and policy-makers. The objective of our paper is to predict next-day and any particular month rocess prices with respect to the company as early as possible. To obtain results at the earliest we made our implementation in Apache Spark, a big data tool. We have used machine learning libraries namely pandas for dataset manipulation, and preferred Pyspark since it is the combination of Apache Spark and Python Therefore it is very essential to predict the rocess prices which make the investor to do investments at the right time. Many algorithms had taken moretime to make predictions. Those algorithms forecasted either next day or a month prices and not both.But in our paper we have to develop a fast computing prediction system for forecasting next day

and any specific month rocess price fluctuations with respect to the company. The proposed system aims to predict the prices of the rocess values periodically at real time with improved and accurate results contains the numeric input data.

Keywords: Digital Currency , Cryptocurrency, Ethereum ,Apache Spark , Pyspark , Pandas.

ABS No.NCETAI-2024:008 SOCIAL IMPACT OF AI : AN OVERVIEW

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This abstract explores the widespread implementation of Artificial Intelligence (AI) techniques across various domains, examining the transformative impact on the blooming field of society. The rapid advancement of AI technologies has permeated diverse sectors, contributing to unprecedented growth, innovation, and societal evolution. The paper delves into the evolution of AI techniques, emphasizing their pivotal role in reshaping industries and daily life. It scrutinizes key AI methodologies, such as Machine learning, deep learning, reinforcement learning, and transfer learning, and highlights their applications in automation, decision-making, and problem-solving.The rise of AI-powered personal assistants, intelligent systems, and autonomous devices is analyzed,showcasing their influence on individual lifestyles and organizational workflows. This paper explores the multifaceted integration of AI in various sectors, examining its impact on healthcare, education, business, and the broader social landscape. Emphasis is placed on the ethical considerations surrounding AI, with discussions on bias mitigation, privacy preservation, and the need for responsible AI deployment. The pivotal role of AI in addressing global challenges, such as climate change and healthcare disparities, showcasing its potential for positive societal impact. AsAI becomes increasingly intertwined with daily life, understanding its increasing applications and implications is essential for navigating the evolving landscape of the modern society.

Keywords: AI, machine learning, deep learning, reinforcement learning, automation, decision-making, and problem-solving.

ABS NO.NCETAT-2024:009 ROLE OF MULTIPROTOCOL LABEL SWITCHING IN NETWORK REDUNDANCY

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MPLS uses labels instead of network addresses to route traffic optimally through shorter pathways. It is protocol-agnostic and can speed up and shape traffic flows across WANs and service provider networks. It allows network operators to establish multiple logical paths between network nodes. By deploying diverse physical connections, such as fiber optic cables and microwave links, MPLS

enables redundant paths for data transmission. Redundancy in networks is crucial to achieve high availability and minimize the risk of service disruptions. By leveraging MPLS, network operators can strategically design redundant network architectures to ensure strong resilience. This paper discusses the ways to enhances MPLS network redundancy using the key factors Path Diversity, Carrier Diversity and Route Control and Failover.

Keywords: MPLS, Redundancy, Path Diversity, Carrier Diversity Route Control, Failover.

ABS No.NCETAI-2024:010 MACHINE LEARNING ALGORITHMS : A REVIEW

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Machine learning (ML) is the scientific study of algorithms and statistical models that computer systems employ to complete a certain task without being explicitly programmed. Many of the applications we use on a daily basis rely on learning algorithms. When an online search engine, such as Google, is used to search the internet, one of the reasons it works so effectively is that it uses a learning algorithm to rank web sites. These algorithms serve a variety of functions, including data mining, image processing, and predictive analytics, to mention a few. The primary benefit of employing machine learning is that once an algorithm understands what to do with data, it can do its tasks automatically. This paper presents a quick review and future prospects of the

Keywords: Algorithm, Machine Learning, Pseudo Code, Supervised learning, Unsupervised learning, Reinforcement learning

ABS No.NCETAI-2024:011 A REVIEW OF IMPROVING PRIVACY PROTECTION USING ANONYMIZED ROUTING PROTOCOL IN MOBILE AD-HOC NETWORKS

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Mobile Ad Hoc Networks (MANETs) use anonymized routing protocols for security reasons. The protocol hides the original identities of alien nodes, so observers cannot compromise the network. Anonymous communication technology in MANET can be broadly classified into three types: reactive technology, proactive technology, and anonymous routing technology. Other backend routing techniques include hop-by-hop encryption and redundant traffic routing. Routing methods are either costly or fail to provide complete anonymity protection for sources, destinations, data, and routes. Mobile ad-hoc networks (MANETs) use various anonymous routing protocols to protect source, destination, and data anonymity. Therefore, an anonymous location-based efficient routing protocol (ALERP) is proposed to ensure a high level of anonymity protection. The idea behind ALERP is to dynamically partition the network field into zones and randomly select nodes within the zones as intermediate relay nodes to create untraceable anonymous routes.

Keywords: MANET, ad-Hoc, GPSR, ALERP

ABS No.NCETAI-2024:012   A CUSTOMIZABLE IOT MONITORING DEVICE FOR SEAWEED FARMERS

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Seaweeds, otherwise known as marine algae are primitive non-flowering photosynthetic macrophytes which are natural renewable resources. Seaweeds (marine macroalgae) are autotrophic organisms capable of producing many interesting compounds which is considered to be second largest freshwater farming industry in the world. Seaweeds formed part of human life's where they are the only natural source for phytochemicals viz; agar, algin and carrageenan which have wide applicationsin day to day life of human beings. To discover the potential of local agar of genus Gracilaria, Eucheuma, Gelidium and local brands as an alternative for imported agarose for DNA electrophoresis, and to test their ability related to produce carbohydrate-rich residues. Currently agarsare obtained from five genera in three orders of red algae such as 'natural agar' in squares or strips or as 'industrial agar' in powder form. Agar extraction from Gelidium and Gracilaria red seaweed species produces hundred thousand ton of carbohydrate-rich residues annually. Gracilaria has played an important role in the production of agar , in which the term 'agaroids' is applied to Gracilaria agars produced without alkaline hydrolysis of sulphates, with greater sulphate content and much less gel strength. Hence further studies on the chemical composition and its economic importance as an agarophyte, as well as its use as a food for humans and various species of shellfish are required. An IoT device to monitor the temperature, light intensity, depth, and motion of seaweed, and these data isused to make decision by the seaweed farmers. The device is customizable and designed to validate and calibrate the embedded sensors. It performs comparably to commercial environmental sensors, enabling the use of the device to be deployed in commercial and research settings.

Keywords: Seaweeds, Agar, Gracilaria, Eucheuma, Gelidium

ABS NO.NCETAT-2024:013 OPTIMIZING JOIN QUERIES USING HYBRID KRILL HERD AND DEEP Q-NETWORK APPROACHES

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Query optimization is a critical task in database management systems, especially when dealing with JOIN queries that involve multiple tables. Traditional optimization techniques often struggle tohandle the complexity and scale of modern databases efficiently. In this research, we propose novel hybrid approaches by integrating the Krill Herd Algorithm with Deep Q-Networks (DQN) and its variants, namely Double Deep Q-Network (DDQN), to optimize JOIN queries. The Krill HerdAlgorithm is a nature-inspired metaheuristic optimization algorithm known for its effectiveness in solving complex optimization problems. By combining it with the reinforcement learning capabilitiesof DQN and DDQN, we aim to enhance the optimization process and improve query performance. We present the algorithmic details of the hybrid models and conduct extensive experiments using

real-world datasets to evaluate their effectiveness. Our results demonstrate significant improvements in query execution time and resource utilization compared to traditional optimization techniques and existing approaches. This research contributes to the advancement of query optimization methods and provides valuable insights into the synergy between nature-inspired algorithms and deep reinforcement learning in database management systems.

Keywords: Query Optimization, JOIN Queries, Krill Herd Algorithm, Deep Q-Networks (DQN), Double Deep Q-Network (DDQN), Hybrid Optimization, Database Management Systems.

ABS NO.NCETAT-2024:014 HIGH-PERFORMANCE CPU LOAD BALANCING IN CLOUD COMPUTING

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Nowadays maintaining the load is the most challenging issue for a researcher in a cloud environment. In the IT field, Cloud computing area is a tremendous technology and its usage of computing resources that provided various services over the internet and its charges is based on usage of resources on the cloud. It provides many services to the users which are productive, reliable and low cost. So, nowadays the users of cloud computing are increasing because every organization, government, and education department are moving toward the use of cloud services. Therefore, whenmany user requests for cloud resources arrive, we can use load balancing technique to fulfill the need of users. Load balancing process is useful to adjust the load on a node (virtual machine) using distributing the load on another under loaded node. The main objective of load balancing is to make the virtual machine balanced which should be not under loaded or overloaded. In this paper, we have proposed a load balancing algorithm by combining two algorithms for balancing the workload over the cloud system. We have used modified honey bee behavior inspired algorithm for priority based tasks and enhanced weighted round-robin algorithm used for non-priority based tasks. The importance of our research work is to improve system performance, better resource utilization and minimum completion time

Keywords: Virtual Machine, Load Balancing Algorithm, Cloud Computing, QoS Parameter

ABS NO.NCETAT-2024:015 EFFECT OF VIRTUAL REALITY BASED TRAINING TO IMPROVE THE PERFORMANCE OF STUDENTS

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The meta-analysis aims to investigate the overall impact and the influence of certain instructional design principles in the context of games, simulations, and virtual worlds. Virtual world is a type of virtual reality technology-based instruction in educational institutional environments. Virtual Reality (VR) technique is incorporated in teaching-learning processes to depth understanding of the concept by learners. In this research work, evaluations were conducted on a total of 15 samples in the

Multiple Choice Questions (MCQ) before and after the VR technique is applied in delivering lecture. A statistical method paired samples t-test is used to test the significant of Virtual Reality in learning process. The research findings emphasize how virtual reality-based training to improve the performance of students.

Keywords: Virtual reality, Paired samples t-test, Teaching-learning, Null hypothesis, Alternative hypothesis

<u>ABS No.NCETAI-2024:016</u> THE FUTURE OF SURVEY ANALYSIS: AI AUTOMATION IN MARKETING

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This study explores the future landscape of survey analysis in marketing, focusing on the transformative role of AI automation. Traditional survey analysis methods often face challenges such as manual processing, limited scalability, and time-intensive procedures. In contrast, AI technologies offer the potential to revolutionize this process by automating tasks such as data cleaning, pattern recognition, and predictive modeling. By leveraging machine learning algorithms and natural language processing techniques, marketers can efficiently extract actionable insights from largevolumes of survey data, enabling data-driven decision-making and strategy formulation. This paper discusses the implications of AI automation in marketing survey analysis, including enhanced efficiency, improved accuracy, and the democratization of data analytics. Additionally, it addresses considerations such as privacy, ethics, and the evolving role of human oversight in an AI-driven landscape.

Keywords: AI automation, Survey analysis, Marketing, Machine learning, Natural language processing, Data-driven Decision-making, Predictive modeling, Scalability, Efficiency, Ethics

<u>ABS No.NCETAI-2024:017</u> BLOCK CHAIN AND ITS CHALLENGES IN REAL ESTATE

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Real estate plays an important role in the national economy, but it is facing a lot of troubles such trust issues, the path of how data handled and lot of automatic process. So many Real Estate organization agents and websites and channels through which people can search a property for buying, leasing or putting their own property up for sale. The real estate by name itself has a lack of trust and transparency in data and record management, hence the maintenance cost of asset data from a transactional perspective is high and it's required to maintain a title and search for public records which contribute to delay and higher costs. The current real estate process is inefficient and this aims to develop a de-centralized system that can expedite the land registration procedure while enhancing its effectiveness using blockchain technology. Block chain technology has real potential in addressingthe issues of liquidity and transparency, opening the market to even retail investors. Blockchain technology has the potential to transform the real estate market by increasing property transaction

efficiency, transparency, and security. Blockchain technology can eliminate the need for intermediaries such as banks and real estate brokers, resulting in cost savings for all parties involved.

Keywords: Blockchain, Cryptocurrency, Bitcoin, Real estate.

ABS No.NCETAI-2024:018 A SURVEY ON EDGE AND CLOUD COMPUTING USING ADAPTIVE ALGORITHM

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Cloud Computing is model for allowing convenient, on demand access anywhere to shared computing resources. Like Amazon, Google, and Microsoft.it denotes as a: cloud". The main conceptis computing, storage, and software "as a service". An adaptive algorithm is a one type of algorithm. It's based on the feedback or new collection of information. They are many different types ofadaptive algorithms.

Keywords: Cloud Computing, Edge computing Artificial Intelligence, Adaptive algorithms, machine Learning, Genetic algorithms.

ABS No.NCETAI-2024:019   OPEN FLOW ROUTING IN SOFTWARE DEFINED NETWORK FOR DETECTING DIGITALANONYMITY USING ENHANCED VIRTUAL RESOURCE PROVISIONING

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Digital anonymity tools have gained a lot of attention in countering systemic surveillance and traffic surveillance and have taken on an essential role in open correspondence over the Internet. Open flow Routing (Tor) is seen as the main procedure for bypassing traffic intelligence and ensuring digital privacy. Tor works by burying activity through a sequence of transmissions, making that traffic look like it started with the last transmission during rush hour, as opposed to the first customer. Be that as it may, Tor has faced several obstacles in rocessIy fulfilling its purpose, such as insufficient enforcement and a limited limit. This document outlines a digital anonymity strategy for software-defined systems (SCS); called SCSOR, which creates open flow holes over various specialized secrecy organizations. The development of SCSOR enables any cloud participant to participate in maintaining secrecy through software-based systems (SCS). Our proposed technique exploits the vastlimit and high availability of business cloud systems to raise the benefits of digital obscurity.

Keywords : Digital Anonymity, Software Defined Network, Open Flow, Prediction, Routing

ABS No.NCETAT-2024:020 AN EXPLORATION OF THE APPROPRIATE ADAPTATION OF ANALYTICAL TOOLS TO ELECTRONIC HEALTH RECORDS

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The use of electronic health records, or EHRs, has increased recently across several nations. Many health organizations can now efficiently store, handle, and process their data because of theseplatforms. For medical professionals, however, the presence of such strong and exactingorganizations presents new problems and obstacles. While obtaining actionable big data insights fromthe health workflow is the primary goal of EHRs, very few physicians actually use widely available analytical tools. This is primarily because dealing with multiple systems and steps completely discourages physicians from engaging more and more.In this paper to improve the use of EHRs by healthcare professionals, we clarify and investigate in this study how analytical tools should be properly adapted to EHRs. In order to do this, we examine the adoption of health analytics at every stage of the process and provide a case study of the OpenEHR deployment process based on an I.

Keywords: Electronic Health Records; EHRs; Analytic tools; Big Data; Health Practitioners.

ABS No.NCETAI-2024:021 REAL TIME FACE RECOGNITION AND DETECTION USING DEEP LEARNING ALGORITHM

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Face features are the primary means of identifying an individual; these features can even differentiate identical twins. Consequently, facial recognition and identification become essential for identifying different people. Facial recognition systems, a type of biometric authentication technology, are used to confirm an individual's identity. Modern applications including home security systems, criminal identification systems, and phone unlocking systems have seen a surge in demand for this technology. This method is regarded as more secure because it relies on a face image instead of external elements like a card or key. Face detection and face identification are the two main processes in the recognition process. This article explores the idea of using deep learning to create a face recognition system with Python's Open CV package. Deep learning is an extremely accurate method because of this.

Keywords: Facial recognition systems, Biometric authentication, Criminal identification systems

ABS NO.NCETAT-2024:022 A NEW METHOD OF PREDICTING STOCK PRICE BASED ON ARTIFICIAL NEURAL NETWORK AND RANDOM FOREST

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Because of the shaky and non-straight nature of monetary financial exchanges, precisely rocess financial exchange returns is a difficult undertaking. With the ascent in computational power and the utilization of man-made reasoning, modified techniques for expectation have been demonstrated to be more viable in anticipating stock costs than previously. By using Fake Brain Organization and Arbitrary Woodland methods, five organizations from various areas of activity had the option to anticipate the end cost for the following day in this review. The model consolidates monetary information like the open, high, low, and shut stock costs to create new factors that are input into the framework. The assessment of these models includes the utilization of RMSE and MAPE, two standard vital pointers.

Keywords: Random Forest Regression, Artificial Neural Network, Stock market prediction

ABS No.NCETAT-2024:023 SUSPECT PREDICTION CRIME ANALYSIS INVESTIGATION TRACKER THE CRIME

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A system that maintains the status of criminal investigations with logs and forecasts key suspects is known as a criminal investigation tracker system. When crimes are committed regularly in a society, they will eventually have an impact on organizations and institutions. The system keeps track of a case's summary, parties involved, legal conflicts, prior criminal histories of those involved, items found at the scene, and other information. The system recognizes the type of case, enables admin to update the investigation's progress, upload further photos of the crime scene and other items discovered there, etc. Authorized officials are now able to search up case information online, check on its status, and update any important information as and when necessary. A suspect prediction algorithm is another component of the system. This paper's major goal is to categories clustered crimes according to how frequently they occur over time. In order to analyses, investigate, and find patterns for the incidence of various crimes, data mining is often employed. Clustering is the division of a set of data or objects into several clusters. Thus, a cluster is made up of a set of related data that behaves as a unit. They determined that the procedure may be made simpler by using crime mapping analysis based on KNN (K – Nearest Neighbor) and ANN (Artificial Neural Network) algorithms. The Office of Community Oriented Policing Services (COPS) manages and funds crime mapping. Research that is based on evidence aids in the analysis of crimes. Data mining techniques are used to calculate the crime rate based on the historical data.

Keyword: Criminal Investigation, (K – Nearest Neighbor) and ANN (Artificial Neural Network).

ABS No.NCETAT-2024:024 DEEP LEARNING – CONVOLUTIONAL NEURAL NETWORK

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Deep learning is considered as a subset of machine learning. It's grounded on learning and perfecting on its own by examining computer algorithms. Machine learning uses simpler generalities, deep learning works with artificial neural networks, which are designed to imitate how humans suppose and learn. It involves neural networks with multiple layers, known as deep neural networks. Inspired by the structure and function of the mortal brain, deep learning algorithms aim to earn and represent complex patterns and features from data. This hierarchical approach allows these models to automatically discover and prize applicable features for tasks similar as image recognition, natural language processing, and more. Convolutional neural networks a special type of neural networks that roughly imitates mortal vision.

Keywords: Deep Learning, Machine Learning and Convolutional Neural Networks.

ABS No.NCETAI-2024:025 IMPORTANCE OF DATA IN THE IOT AND BIG DATA ERA

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In the era of the Internet of Things and Big Data, data scientists are required to extract valuable knowledge from the given data. Data is becoming the most valuable asset for any organization and might be its only truly inimitable asset. In the current era, Data Science has emerged as a crucial field. During this era, a significant amount of data is generated and collected across various domains. Data Science aids researchers and practitioners in extracting valuable insights and making data- driven decisions. Therefore, comprehensive literature analysis is necessary to understand trends, contributions, and research developments in Data Science. The growth in the quantity and diversity of data has led to data sets larger than is manageable by the conventional, hands-on management tools. The accessibility to large datasets enables the application of complex algorithms and data science (DS) tools. In this sense, DS tools, such as machine learning (ML), have the potential to support several fields of research, such as biomedicine, neuro- science or robotics, by the automation or resolution of complex tasks in time series prediction, classification, regression, diagnostics, monitoring, and so on. Data are widely considered to be a driver of better decision making and improved profitability, and this perception has some data to back it up. The common theme in descriptions of the job of the data scientist is a kind of beginning-to-end narrative, whereby data scientists have a hand in many, if not all, aspects of a process that involves data. The only aspects in which they are not involved are the choice of the question itself and the decision that is ultimately made upon seeing the results. In fact, based on our experience, many real-world situations draw the data scientist into participating in those activities as well. This study not only provides an overview of the current state of Data Science but also serves as a guide for future research directions. By identifying emerging research areas and existing literature gaps, this analysis can inform researchers and decision-makers about potential opportunities and challenges in the field. Ultimately, the findings of this study will contribute to the advancement of Data Science by revealing key trends, influential contributions, and research developments that shape its evolution.

Keywords: Machine Learning , Neuro- Science , Big Data

ABS No.NCETAI-2024:026 ROBOTICS IN HEALTHCARE SERVICE FOR USER CENTRIC ANALYSIS APPROACH

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Recent advances in electronics and telecommunication have paved the way for service robots to enter the Medical world. While service robotics has long been a core research theme in computer science and other engineering-related fields. We said that service robotics represents an interesting area of investigation, especially for healthcare, since current research lacks a thorough examination of socio-technical problems and contextual influencing factors. This study identifies current research thrusts and delineates possible areas for theoretical, empirical, or design-oriented research. By means of a systematic literature review, we explore the current use, users, and utility of service robots in Medical field. Based on these , we suggest research topics that have the potential to be of practical significance. Our aim is to make substantive steps towards establishing service robotics as new research theme in information systems research.

Keywords: Healthcare information technology, Hospitals, Service robotics, Research gaps.

ABS No.NCETAI-2024:027 IMPACT OF ARTIFICIAL INTELLIGENCE ON DECISION MAKING AND UNEMPLOYMENT IN SOCIETY

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Artificial intelligence is a transformative technology, which works in the field of computer science and emphasizes on the creation of an intelligent machine that works such as speech recognition, learning, planning and problem solving, robots, games. AI is all about making machines smarter so, they can think, work, and perform humanly task. At present, some of the examples of AI can beabout playing chess on the computer to self-driving cars, which relies on deep learning and natural learning process. AI is becoming more popular with each passing day because of increased data volumes, advanced algorithm and improvement in computing power and storage. Therefore, peoplein business are increasingly looking for ways tomake their products and services more intelligent through AI. Social media platforms also rely heavily on AI. When considering how AI might become a risk, experts told multiple scenarios that are most likely to happen in future. Like unemployment, because the labour society is concerned primarily with automation as we have invented ways to automate jobs. We could create room for people to assume more complex roles, moving from the physical work that dominated the pre-industrial globe to the cognitive labour that characterizes strategic and administrative work in our globalized society. Inequality of our economic system is based on compensation, where the contribution to the economy is often assessed using hourly wages. Currently, Artificial Intelligence is bringing a significant transformation in the industry. Conventional ways of doing commerce are changing. "Machines, with human-level competence"the idea is both terrifying and exciting. This concept of machines with human-level competence is emerging and should be carefully monitored. Artificial Intelligence has been a revolution in every field. The application of AI has transformed the conventional ways of almost every area inmodern society.

Keywords: AI, Robotics, Automation, Deep Learning, Natural Learning Process, Data Volumes.

ABS No.NCETAI-2024:028 ROLE OF ARTIFICIAL INTELLIGENCE IN DECISION SUPPORT SYSTEM

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A Decision Support System (DSS) in the context of artificial intelligence (AI) refers to a software or system that utilizes AI techniques to assist human decision-makers in solving complex problems. These systems typically integrate data analytics, machine learning, and optimization algorithms to provide insights, recommendations or predictions that aid in decision-making processes. Artificial Intelligence techniques are increasingly extending and enriching decision support through such means as coordinating data delivery, analyzing data trends, providing forecasts, developing data consistency, quantifying uncertainty, anticipating the user's data needs, providing information to the user in the most appropriate forms, and suggesting courses of action. AI technology provides the powered tools to aid decision-makers in fields such as healthcare, finance, logistics, and more. A refined class of AI techniques is uprising the support of decision making, especially under uncertain conditions by such means as coordinating data delivery, analyzing data trends, providing forecasts, developing data consistency, quantifying uncertainty, anticipating the user's data needs, providing information to the user in the most appropriate forms, and suggesting courses of action.

Keywords: Decision-making, AI technology, Machine learning, Data consistency.

ABS No.NCETAI-2024:029 DETECTION OF PNEUMONIA USING CONVOLUTIONAL NEURAL NETWORK (CNN)

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Artificially intelligent computer systems are used extensively in medical sciences. Common applications include diagnosing patients, end-to-end drug discovery and development, improving communication between physician and patient, transcribing medical documents, such as prescriptions, and remotely treating patients. While computer systems often execute tasks more efficiently than humans, more recently, state-of-the-art computer algorithms have achieved accuracies which are at par with human experts in the field of medical sciences. Some speculate that it is only a matter of time before humans are completely replaced in certain roles within the medical sciences. This paper is used to detect pneumonia using Convolutional Neural Network(CNN). Pneumonia is an infection thatinflames the air sacs in one or both lungs. The air sacs may fill with fluid or pus (purulent material), causing cough with phlegm or pus, fever, chills, and difficulty breathing. A variety of organisms, including bacteria, viruses and fungi, can cause pneumonia. Pneumonia can range in seriousness from mild to life-threatening. It is most serious for infants and young children, people older than age 65, and people with health problems or weakened immune systems. Pneumonia is typically identified by doctors using chest X-rays. However, AI is capable of identifying disease in X-ray images of patients. Convolution Neural Networks (CNNs) are used to develop the AI system. By analysing chest X-ray

scans, the AI project can automatically determine whether a patient has pneumonia or not. Because people's lives are on the line, the algorithm has to be highly precise.

Keywords: Artificial Intelligence, Convolutional Neural Network(CNN), Pneumonia, X-ray images

ABS No.NCETAI-2024:030 A SMART ARTIFICIAL INTELLIGENCE AND IOT APPROACH FOR ENHANCING COGNITIVE ABILITIES IN CHILDREN WITH AUTISM SPECTRUM DISORDER

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Autism is a neurological disorder that affects the capability to communicate and interact socially. It can be defined as a neurobehavioral condition that involves weaknesses in communication skills social interaction and developmental language combined with repetitive behaviors. The range of symptoms is called Autism Spectrum Disorder (ASD). One of the difficulties we face when dealing with children is to determine what they feel, especially autistic children, as those with this disease suffer from difficulty in accommodating to the environment around them. One way to overcome this problem is by using assistive technologies and finding ways how to benefit from the use of technology intelligent systems to help these children. The key problem of autistic children is considered in expressing their feelings and communicating with others. The primary goal of this research is to establish a supportive environment using IoT and AI technology to help autistic children communicate with others easily and flexibly. An AI-enabled intelligent system with the Internet of Things to help the autistic child adapt to the adjacent environment by defining the emotional state of the child through a sensor that reads the child's heartbeat is classified by machine learning models. Four classification models were tested, where SVM and Random Forest algorithms were the best for this task. Then, a notification is sent with the child's state to the guardian with recommendations suitable for the child's emotions. Cloud computing services can be used to improvethe results to be more accurate and to achieve more security for the data. Moreover, optimization algorithms can be performed to help parents improve the behavior of their Autistic children in aneasy way using this technology.

Keywords: Autism Spectrum Disorder (ASD), AI technology, IoT (Internet of Things), Machine learning models, SVM (Support Vector Machine), Random Forest algorithm, Emotional expression, Heartbeat sensor, Data security, cloud computing.

ABS No.NCETAI-2024:031 DEEP LEARNING ADVANCEMENTS IN PADDY LEAF DISEASE CLASSIFICATION: A DENSENET201 APPROACH WITH DROPOUT OPTIMIZATION AND ADAM OPTIMIZER

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Paddy (rice) plants are crucial in global food security. However, they are susceptible to various diseases, which if left untreated, can significantly impact crop yields. Prompt and accurate disease detection is essential for effective disease management. While direct classification of paddy leaf

diseases based on symptoms is common, it is often challenging due to the similarity in symptoms across different diseases and variations in human judgment. Therefore, leveraging Deep Learning techniques for classifying paddy leaf diseases is expected to improve both efficiency and accuracy. This study explores the use of the DenseNet201 architecture, known for its ability to capture intricate features, in addressing this problem. The objective is to evaluate the effectiveness of transfer learning with DenseNet201 in enhancing the classification accuracy of paddy leaf diseases compared to traditional methods. The study investigates two experimental scenarios: varying dropout rates and comparing optimizers. Results indicate that a dropout rate of 0.1 combined with the Adam optimizer yields the highest accuracy, achieving 99.5% accuracy on the training set, 95.2% on the validation set, and a 96% accuracy rate on the confusion matrix. Subsequent testing using a separate dataset of paddy leaf images confirms the model's effectiveness, achieving a new accuracy of 92.5% in classifying paddy leaf diseases. This research sheds light on the potential of Deep Learning, particularly DenseNet201, in advancing disease diagnosis and management inpaddy cultivation.

Keywords: Paddy Leaf Disease, DenseNet201, Classification, Dropout, Optimizer

ABS No.NCETAI-2024:032 A DEEP LEARNING METHOD USING A MULTI SCALE CONVOLUTIONAL NEURAL NETWORK FOR BRAIN TUMOR CLASSIFICATION AND SEGMENTATION

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In this study, we present a multiscale, fully autonomous segmentation and classification model of brain tumors based on Deep Convolutional Neural Networks. Unlike previous approaches, our proposal uses separate processing routes to process input images in three spatial scales. This system is based on the way the Human Visual System naturally functions. The proposed neural model can evaluate MRI scans with three types of tumors over sagittal, coronal, and axial views: meningioma, glioma, and pituitary tumor. It does not require preprocessing of input images to remove parts of the skull or vertebral column. We evaluate the performance of our technique on a publicly available dataset consisting of 3064 slices from 233 MRI pictures of patients.

Keywords: Brain tumor, Multiscale approach, Coronal**,** Meningioma, Glioma, Pituitary tumor

ABS No.NCETAI-2024:033   INTEGRATING DEEP LEARNING TECHNIQUES FOR ENHANCED BIOMETRIC AUTHENTICATION

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Biometric authentication systems, particularly those relying on facial recognition, have becomeintegral components of modern security protocols. This abstract explores the integration of deep learning techniques to augment the performance and reliability of biometric authentication. The paperfocuses on the application of convolutional neural networks (CNNs) and recurrent neural networks (RNNs) to address challenges associated with facial recognition. The limitations of traditional methods in handling variations in facial features, lighting conditions, and expressions. Recognizing

the need for more robust solutions, the paper introduces a novel approach centered around deep learning architectures. The primary objective of this research is to evaluate the efficacy of deep learning models in enhancing the accuracy of biometric authentication systems. The study includes a comparative analysis of traditional and deep learning-based facial recognition methods, considering performance metrics such as accuracy, false acceptance rate (FAR), and false rejection rate (FRR). Inconcerns related to data security, user privacy, and potential biases in deep learning models, proposing guidelines for responsible implementation and adherence to privacy regulations. Theintegration of deep learning techniques to enhance biometric authentication, with a specific focus on facial recognition.

Keywords: Facial recognition, Biometric authentication, Data security, Privacy.

ABS No.NCETAI-2024:034 APPLICATION USAGE OF DRONES IN AGRICULTURE

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Drone technology has gotten most of the recognition in the industry because of its diversity and considered the future for the agrarian community. The population is increasing tremendously and with this increase the demand of food. The traditional methods which were used by the farmers were not sufficient enough to fulfil these requirements. Thus, new automated methods (Drone technology) were introduced. Drones don't merely enhance overall performance but also encourage farmers to solve other assorted barriers and receive plenty of benefits through precision agriculture. Drones technologies saves the excess use of water, pesticides, and herbicides, maintains the fertilityof the soil, also helps in the efficient use of man power and elevate the productivity and improve the quality. The objective of this paper is to review the usage of Drones in agriculture applications. This paper summarizes the current state of drone technology for agricultural uses, including crop health monitoring and farm operations like weed management, evaporation , spraying etc. The research article concludes by recommending that more farmers invest in drone technology to better their agricultural outputs.

Keywords: Drone, Crop health monitoring, Evaporation, Spraying

ABS NO.NCETAT-2024:035 RESEARCH ON CLOUD STORAGE AND ITS TECHNOLOGIES

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Cloud computing is a revolutionary mechanism that changing way to enterprise hardware and software design and procurements. Because of cloud simplicity everyone is moving data and application software to cloud data centres there still exist significant issues that need to be consideredbefore shifting into cloud. Security stands as major obstacle in cloud computing. This paper gives an overview of the security issues on data storage along with its possible solutions many companies are not ready to implement cloud computing technology due to lack of proper security control policy and weakness in protection which lead to many challenge in cloud computing. An independent

mechanism is required to make sure that data is correctly hosted in to the cloud storage server. In this paper, we will discuss the different techniques that are used for secure data storage on cloud. This paper also provides a process to avoid Collusion attacks of server modification by unauthorizedusers.

Keywords: Introduction, Cloud Computing And Cloud Storage, Cloud Storage Security, issues, solution, conclusion.

ABS NO.NCETAT-2024:036 GREEN IOT FOR ECO-FRIENDLY SMART CITIES

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The way we live and work has changed as a result of the advancement of Internet of Things (IoT) technology and its incorporation into smart cities, enriching our civilization. Nevertheless, there are a number of drawbacks to IoT technologies, including higher energy usage, hazardous pollutants, and the creation of e-waste in smart cities. Applications for smart cities must be eco-friendly, which calls for a shift to green IoT. Green IoT creates a more sustainable ecosystem that is more suited for smart cities.. Adopting energy-efficient standards to lessen the environmental impact of IOT applications is known as Green IOT. IoT devices need to be energy-efficient in order to reduce the impact of CO_2 emissions. Its primary objective is to maximize the technology's carbon footprint while utilizing IOT sustainably to minimize its detrimental effects on the environment. An interesting future where green networks deeply integrate our physical surroundings is hinted at by green IoT. It is a given that IoT green networks with sustainable designs would lower operational expenses, energy consumption, and pollution levels in the environment. IoT will surely improve and simplify our lives, and it will have a big impact on how we handle certain problems in our daily lives. Green IoT aims to make IoT devices more energy-efficient so that a more sustainable environment can be created.

Keywords -Green IoT, Sustainability, Carbon footprint, Energy efficiency, Smart Cities

ABS NO.NCETAT-2024:037 PERFORMANCE QUANTIFICATION IN A SDN-BASED VIRTUAL MACHINE ALLOCATION ENVIRONMENT

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In this paper software-defined network ((SDN) approach used to give a bunch of conscious dynamic allocators for virtual machines (VMs) in the cloud server farm (DC). Each VM demand has four boundaries: CPU,RAM, circle, or memory. In private cloud design, virtual machine allocation is one of the challenges in cloud computing environments. In this climate, each virtual machine is relegated to an actual host in light of the assets accessible on the host. In particular, on account of various execution markers and framework necessities, measuring the presentation of planning and designation procedures in the cloud framework for various applications and administration models is an exceptionally difficult and troublesome arrangement.

Key words – Cloud Computing, Network, Storage, VM, IT resources.

ABS No.NCETAT-2024:038 A COMPARATIVE STUDY ON MACHINE LEARNING ALGORITHMS FOR PREDICTING THE PLACEMENT INFORMATION OF UNDER GRADUATE STUDENTS- REVIEW

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The student population is now more interested in understanding the fundamentals of machinelearning (ML) and its many algorithms as ML techniques are being used to solve hard and fascinating real-world prediction issues. This involves putting the well-known machine learning algorithms into practice and testing them by having students in the educational system solve straightforward prediction questions. Specifically, this work suggests employing the linear regression model, K-neighbor regression model, decision tree regression model, gradient boost regression model, XGBoost regression model, light GBM regression model, and random tree classifier model to tackle the student placement prediction problem. There are two stages to this work. Phase 1 involves using a basic data collection, while Phase 2 involves using an expanded data set that includes more student-specific attributes. Using these two data sets as implementation examples, this research paper gives a comparative performance analysis of these seven models. The root mean square error (RMSE) and prediction accuracy are the performance metrics taken into account in this study.

Keywords: Machine learning; Learning model; Prediction; regression model; Student placement prediction.

ABS No.NCETAI-2024:039 ROLE OF ARTIFICIAL INTELLIGENCE IN DRUG DISCOVERY AND DEVELOPMENT

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Artificial Intelligence (AI) has recently started to gear-up its application in various sectors of the society with the pharmaceutical industry as a front-runner beneficiary. This review highlights the impactful use of AI in diverse areas of the pharmaceutical sectors viz., drug discovery and development, drug repurposing, improving pharmaceutical productivity and clinical trials. Crosstalk on the tools and techniques utilized in enforcing AI, ongoing challenges, and ways to overcome them, along with the future of AI in the pharmaceutical industry, is also discussed. The application of AI in disease diagnosis, digital therapy, personalized treatment, drug discovery and forecasting epidemics or pandemics was extensively reviewed in this article. Deep learning and neural networksare the most used AI technologies; Bayesian nonparametric models are the potential technologies

for clinical trial design; natural language processing and wearable devices are used in patient identification and clinical trial monitoring. Deep learning and neural networks were applied in predicting the outbreak of seasonal influenza, Zika, Ebola, Tuberculosis and COVID-19. With the advancement of AI technologies, the scientific community may witness rapid and cost-effective healthcare and pharmaceutical research as well as provide improved service to the general public.

Keywords: Artificial Intelligence, Clinical Trial, Disease diagnosis, Drug discovery, Epidemic, Personalised Medicine, Prediction

.ABS No.NCETAI-2024:040 DEEP LEARNING BASED MULTI CLASS CLASSIFICATION OF RICE GRAINS

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Rice, which is among the universally produced grain products all over the worldwide, has many genetic varieties. These varieties are separated from each other due to some of their features. These are usually morphological features such as texture, shape, and color. With these features that distinguish rice varieties, it is possible to classify and evaluate the quality of seeds. In this study, Arborio, Basmati, Ipsala, Jasmine and Karacadag, which are five different varieties of rice often grown in Turkey, were used. A total of 75,000 grain images, 15,000 from each of these varieties. There are 106 features including 12 morphological, 4 shapes and 90 color features obtained from these images was used. Models were created by using the pre- trained models InceptionV3, DenseNet, and EfficientnetB7 algorithm for the image dataset, and classification processes were performed. Prediction, Recall, F1 score, accuracy, false positive rate and false negative rate were calculated using the confusion roces values of the models and the results of each model were given in tables. Classification successes from themodels were achieved as 94.67% for INCEPTION-V3, 96.54% for DenseNet and 99.90% for Efficient B7. With the results, it is seen that the models used in the study in the classification ofrice varieties can be applied successfully in this field.

Keywords: Grain products, Prediction, Recall, Morphological

ABS No. NCETAT-2024:041 PROBABILISTIC NEURAL NETWORK BASED CLASSIFIER FOR BREAST CANCER

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The monitoring of patients suffering from different diseases and the identification of those disorders depend heavily when processing images techniques. Among the most important steps is the prognosis from breast cancer. It is difficult to segment the tumour cells within the breast due toweak contrast and hazy pictures. Here, a good technique for eliminating noise has been established, and the images will undergo certain enhancements to enable flawless diagnosis. The image will next be segmented. To identify the tumor region in the image, the boundary the breast will be

segmented using the suggestion segmentation approach in conjunction with the thresholding method. In this we are importing keras transfer learning algorithm to redefine the model. After training the neural network save the model. After feeding the input image pass the image to model using Probabilistic Neural Network classifier algorithm and picture manipulation technique. Breast Image processing technique is accustomed to check the class and find the results that the images arevalid or not valid.

Keywords: Neural Network ,Image Processing Technique, Classifier Algorithm.

ABS No. NCETAT-2024:042 DATA DRIVEN CYBER SECURITY IN PERSPECTIVE INTELLIGENT TRAFFIC ANALYSIS

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The detection and defense of cyber attacks, social and Internet traffic monitoring is essential. Traditional data driven cyber security techniques using manually defined criteria are increasingly replaced with automated, machine-learning technologies. The transformation has been hastened by large data sets that support excellent performance machine-learning algorithms. Execute the multinomial naïve bayes classifier the article reviews current analysis of cyber traffic through social networks and the internet through the use of a set of common concepts of similarity, correlation and collective indication and by sharing security objectives for the classification of network host or applications and users or tweets. The capacity to accomplish the is not isolated, but is attracted to a wide usage of many other networks or social flows. In addition, the flows include various features, such as fixed size and multiple messages from source to destination. The Research shows a novel technique of study on data-driven cyber security and its use in analysis of social and Internet traffic. The cyber security approach has three components, cyber security data processing, cyber safety engineering, and cyber security modeling.

 Keywords: Cyber Attacks, Machine-learning algorithms, Cyber safety.

ABS No. NCETAT-2024:043 DATA ANALYTICS IN PREDICTION OF INSTAGRAM IN CYBER SECURITY BASED ON DEEP LEARNING TECHNIQUES

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People rocess social media platforms for sharing their lives, communicate, and obtain access toglobal information and news. We are using the Instagram dataset as an input. Instagram serves as a photo video and an environment for sharing that lets individuals exchange images as well as films featuring friends and followers. It is also widely used by businesses and organizations as a marketing and advertising platform. We are using training and testing data to combat the spread of misinformation on Instagram. This frequent hashtag is split into count and hashtag. Hashtag is employed to classify material to enhance its accessibility. A popular technique for classifying datasetsaccording to statistical analysis of their contents is the multinomial naïve Bayes classifier method. A confusion matrix is a certain table arrangement that summarises the prediction value and enables the rocess istic of an algorithm's performance. The main applications of popular technique for

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classifying deep learning techniques are in the detection of racist anomalous Hashtag news and the cluster analysis   rocess istic of trending news.

Keywords: Data Analytics, Hashtag, Confusion Matrix, Deep Learning.

ABS No. NCETAT-2024:044 DIFFERENTIAL REPORT RELATING TO THE ASTHMA DIAGNOSIS AND THE CHRONIC OBSTRUCTION OF THE LUNGS FUNCTIONALITY TEST

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As the lung is responsible for the most vital bodily function, breathing, any persistent change in respiratory pattern, whether it's a rise. Or reduction, is an indication of lung problems. Inhalation allergies and the rise in death rates associated with respiratory disorders are largely because in cases of persistent obstructive lung Disease's indications and symptoms. The main reason for the high death rate is that asthma and these two illnesses cannot be set apart from one another. Differentiating between two conditions is required to develop appropriate treatment and medication plans. For this study, the Division of Cardiology Medicines and the Institute of Medical Sciences, All India provideddata from the Pulmonary Function Test for patients in three groups: Control, Asthma. K-means clustering algorithm semphysema geographical location can be studied population-wide with the helpof the suggested spatial mapping method. The existing models were developed using conventional variable data mining approaches and have good Particularity and sensitivity. According to this application, a potentially useful evaluation instrument for asthma outcome prediction has better predictive power when specific risk factors are taken into account.

Keywords: Cardiology, K-means Clustering ,Spatial Mining.

ABS No. NCETAT-2024:045 AUTOMATIC LEAF DISEASE IDENTIFICATION USING DLDPF (DEEP LEAF DISEASE PREDICTION FRAMEWORK)

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India's economy depends heavily on agriculture in this particular sector. In this field of precision agriculture, innovation spurred by technology is still relatively new, though. However, advances in technology have produced notable enhancements. The integration of technology into agricultural activities has become feasible with the rise of profound understanding as a component of artificial intelligence. The dataset loads the drive and feeds input into the neural network architecture after uploading the image dataset. To reinvent the model, we are importing the Keras transfer learning algorithm in this. Neural networks save the model by obeying commands. Using the clustering technique and the algorithm for machine learning, feed the input image to the model. Class is checked using the clustering technique. And determine whether the pictures are valid or not. If successful, it will accurately identify the disease name. The recommended framework The Deep Leaf

Disease Forecast Framework is compared to Google Net and Alex Net, two additional models for deep learning. Apple Leaf datasets are utilized in empirical studies. Diseases have an effect on crop growth and harvest yield, and they are frequently challenging to manage. Accurate illness detection and timely disease control measures are essential for maintaining high productivity and excellent quality.

Keywords: Machine Learning, Keras Transfer Learning, Deep Leaf Disease.

ABS No. NCETAT-2024: 046 DIABETICS PREDICTION USING VARIOUS MACHINE LEARNING ALGORITHM

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A range of metabolic abnormalities can lead to the most common disease, diabetes. Diabetic mellitus is an additional name for it. Human organs are impacted by it. Predicting this illness early on will help control it. Blood sugar levels may rise in diabetic patients who receive no treatment for a lengthy period. Split the dataset into training and testing sets to evaluate the performance of the models. Regression high utility pattern mining algorithm and statistics are used to predict the diseasewith the help of current and past data. Using various Machine learning algorithm to helps the doctors to predict early stage for diabetics. Gather a dataset containing relevant features such as glucose levels, blood pressure, BMI, age, family history along with the target variable indicating whether the individual has diabetes or not. Diabetic's dataset is expanded with various algorithms and patient medical records in preparation for experimental analysis. Use Random forest, Decision tree, XG boost, and Support Vector Machine to predict whether a patient has diabetes based on diagnostic measurements. Evaluate the models using the testing dataset and the chosen evaluation metrics. It is discussed and contrasted how well the applicable algorithms perform and are accurate.

Keywords: Regression, Machine Learning, Vector Machine, Decision Tree.

ABS No. NCETAT-2024:047 DATAANALYTICS IN ULTRASONIC BONE ASSESSMENT USING PREPROCESSING TECHNIQUES BASED ON ATTRIBUTE ANALYSIS ALGORITHM

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Bone disease is the major cause of fractures in postmenopausal women and in older men. Fractures can occur in any bone but happen most often in bones of the hip, vertebrae in the spine, and wrist the objective of this study is to effectively predict if the patient suffers from osteoporosis disease. The health professional enters the input values from the patient's health report. When compared to alternative machine learning approaches. The osteoporosis diagnosis both a priori without symptomatic finding or in case of a fractured bone is based on laboratory and bone examination is applied. In particular, we initially use preprocessing techniques detectors to identify and assess their restriction in trabecular landmarks. Then we present an analysis of statistical form models to detect the disease by using Attribute analysis algorithm detection as a basis by using spatial distribution of

trabecular landmarks in DPR pictures and their structural relationships beforehand. Using pre-processing-based the first present a statistical shape model for trabecular landmark detection by rocess i detection as a baseline spatial distribution prior of trabecular landmarks in DPR images and their structural relations and predict the graphical output of disease.

Keywords: Bone Disease, Attribute analysis, Trabecular.

ABS No.NCETAT-2024:048 DETECTION OF NODE FAILURE TECHNIQUES USING CHURN RESILIENT PROTOCOL

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Massive data dissemination is often disrupted by frequent join and departure or failure of client nodes in a peer-to-peer (P2P) network. We propose a new churn-resilient protocol (CRP) to assure alternating path and data proximity to accelerate the data dissemination process under network churn.The CRP enables the construction of proximity-aware P2P content delivery systems. We present new data dissemination algorithms using this proximity-aware overlay design. We simulated P2P networks up to 20,000 nodes to validate the claimed advantages. Specifically, we make four technicalcontributions, The crp scheme promotes proximity awareness, dynamic load balancing, and resilience to node failures and network anomalies. 2). The proximity-aware overlay network has a 28-50 percent speed gain in massive data dissemination, compared with the use of scope-flooding or epidemic tree schemes in unstructured P2P networks. The CRP-enabled network requires only 1/3 of the control messages used in a large CAM-Chord network. 4) Even with 40 percent of node failures, the CRP network guarantees atomic broadcast of all data items. These results clearly demonstrate the scalability and robustness of CRP networks under churn conditions. The scheme appeals especially toweb scale applications in digital content delivery, network worm containment, and consumer relationship management over hundreds of data centers in cloud computing services.

Keywords: Peer-to-Peer (P2P) Network, CRP, Proximity Awareness, Network, Datacenters

ABS NO.NCETAT-2024:049   CONGESTION CONTROL MECHANISM FOR BACKGROUND DATA TRANSFERS WITH LATENCY REDUCER

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One of the challenging issues for supporting emergency services in wireless networks is coordinating the network under emergent situations. Cooperative communication (CC) is a promising approach which can offer significant enhancements in multi-hop wireless networks. This paper investigates the potential issues in using this communication paradigm to support emergency services. This paper proposed a promoting energy-efficient and congestion-aware cooperative networking for emergency services based on the idea of Do-It-Yourself. We propose a novel cross-layer design which jointly considers the problems of route selection in network layer, congestion and non-cooperation avoidance among multiple links in MAC layer under cooperative multi-hop wireless environments.
This paper formulated the multi-hop cooperative flow routing and relay node selection process as an optimization problem. Based on the formulations and models, we propose a self-supported networking scheme including three novel components that make the solution procedure highly

efficient. Analysis and simulation results show that our approaches significantly achieve betternetwork performance and typically satisfy the requirements for emergency services in multi-hop wireless networks.

Keywords: Network Technology, Self-supported, Cooperative Communication, Emergency Services, Dependency Graph, Cross-layer Optimization.

ABS No.NCETAT-2024:050 CONSTRAINT BASED TEMPORAL TASK SCHEDULER FOR PROFIT MAXIMIZATION

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As cloud computing is becoming growingly popular, consumers' tasks around the world arrive in cloud data centers. A private cloud provider aims to achieve profit maximization by intelligently scheduling tasks while guaranteeing the service delay bound of delay-tolerant tasks. However, the aperiodicity of arrival tasks brings a challenging problem of how to dynamically schedule all arrival tasks given the fact that the capacity of a private cloud provider is limited. Previous works usually provide an admission control to intelligently refuse some of arrival tasks. Nevertheless, this will decrease the throughput of a private cloud and cause revenue loss. This paper studies the problem of how to maximize the profit of a private cloud in hybrid clouds while guaranteeing the service delay bound of delay-tolerant tasks. We propose a profit maximization algorithm (PMA) to discover the temporal variation of prices in hybrid clouds. The temporal task scheduling provided by PMA can dynamically schedule all arrival tasks to execute in private and public clouds. The sub problem in each iteration of PMA is solved by the proposed hybrid heuristic optimization algorithm, simulated annealing particle swarm optimization (SAPSO). Besides, SAPSO is compared with existing baseline algorithms. Extensive simulation experiments demonstrate that the proposed method can greatly increase the throughput and the profit of a private cloud while guaranteeing the service delay bound.

Keywords: Data centers, Profit maximization algorithm, SAPSO, Throughput, Delay-tolerant

ABS No. NCETAT-2024:051 RANK BASED FRAUD DETECTION FOR MOBILE APPLICATION

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We propose Fraudulent behaviours in Google Play, the most popular Android app market, fuel search rank abuse and malware proliferation. To identify malware, previous work has focused on app executable and permission analysis. In this paper, we introduce Fair Play, a novel system that discovers and leverages traces left behind by fraudsters, to detect both malware and apps subjected tosearch rank fraud. Fair Play correlates review activities and uniquely combines detected review relations with linguistic and behavioural signals gleaned from Google Play app data (87K apps, 2.9Mreviews, and 2.4M reviewers, collected over half a year), in order to identify suspicious apps. Fair Play achieves over 95% accuracy in classifying gold standard datasets of malware, fraudulent and legitimate apps. We show that 75% of the identified malware apps engage in search rank fraud. Fair Play discovers hundreds of fraudulent apps that currently evade Google Bouncer's detection

technology. Fair Play also helped the discovery of more than 1,000reviews, reported for 193 apps that reveal a new type of "coercive" review campaign: users are harassed into writing positive reviews, and install and review other apps.

Keywords: Malware, Search Rank, Play store, Genuine Apps, Fraud Detection

ABS No. NCETAT-2024:052 IMPROVED OCCLUSION THERAPHY FOR AMBLYOPIC PATTERN TECHNIQUE

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Drugs are a major problem in economic and many losses in worldwide. In this project, an image processing approach is proposed for identifying drugged eye based on convolutional neural network. According to the CNN algorithm, eye image details are taken by the existing packages fromthe front end used in this project. However, it can take a few moments. So, this proposed system can be used to identify drugged eyes quickly and automatically. The eye images dataset are taken from Kaggle. These images are taken as a training set for this drugged eye detection. This proposed approach is composed of the following main steps that getting input image, Image Pre-processing, identifying reddish places, highlight those affected places, Verifying training set, showing result. Fewtypes of eyes like drugged socially may missed to identify. This approach was tested according to drugged eye type and its' stages, such as drug consumed and not consumed. The algorithm was used for detecting the white area of eye present in given input image. Images were provided for training, such as drugged eye images and normal eye images. Before the image processing, images were converted to color models, because of find out the most suitable color model for this approach. Local Binary Pattern was used for feature extraction and Support erosion method was used for creating the model. According to this approach, drugged eyes can be identified in the average accuracy of 95%.

Keywords: CNN algorithm, Eye detection, Local Binary Pattern, Convolutional neural network

ABS No. NCETAT-2024:053 IDENTIFY BASED DATA AUDIT IN DATA MINING

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Firewalls have been widely deployed on the Internet for securing private networks. Afirewall checks each incoming or outgoing packet to decide whether to accept or discard the packet based on its policy. Optimizing firewall policies is crucial for improving network performance. Prior work on firewall optimization focuses on either intra-firewall or inter-firewall optimization withinone administrative domain where the privacy of firewall policies is not a concern. This paper explores inter firewall optimization across administrative domains for the first time. The key technical challenge is that firewall policies cannot be shared across domains because a firewall policycontains confidential information and even potential security holes, which can be exploited byattackers. The system proposes the first cross-domain privacy-preserving cooperative firewall policy optimization protocol. Specifically, for any two adjacent firewalls belonging to two different administrative domains, our protocol can identify in each firewall the rules that can be removed because of the other firewall. The optimization process involves cooperative computation betweenthe two firewalls without any party disclosing its policy to the other. This system implemented our protocol and conducted extensive experiments. The results on real firewall policies show that our protocol can remove as many as 49% of the rules in a firewall whereas the average is 19.4%. The

communication cost is less than a few hundred KBs. Our protocol incurs no extra online packet processing overhead and the offline processing time is less than a few hundred seconds.
Keywords: Firewalls, optimization process, protocol, Internet for securing

ABS No. NCETAT-2024:054 ONLINE CRIME REPORTING AND MANAGEMENT SYSTEM

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The aim of this project is to develop an online crime reporting and management system which is easily accessible to the public, the police department and the administrative department. Thenormal public in India is afraid to lodge a complaint because they are filled with a false fear about thepolice department. An online complaint registering system will allay the fears of the public and will also help in the public helping the police department in catching criminals. An online solution is very useful as the solution is inherently distributive. This distributive characteristic of rocne solution helps in getting the different police stations to share information and get in contact with one another. The administrative work required to maintain records reduces greatly as the paperwork is almost minimal and the data is stored in an organized. The other features of this online solution are enquiry about a complaint which has been registered before, the status of the complaint and other information. Keeping records of all the criminals will help the police department in keeping tabs on the criminals to refrain them from getting into illegal activities. On the whole, the online crime registering and maintenance solution is an excellent method, which bridges the gap between the public and the police department and also helps the police department in preventing criminal activities.
Keywords: Online crime, Police department, online solution, Criminals

ABS No. NCETAT-2024:055 A HEARISTIC APPROACH TO BUILD TRUST MODEL IN PEER TO PEER

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Open nature of peer-to-peer systems exposes them to malicious activity. Building trust relationships among peers can mitigate attacks of malicious peers. This paper presents distributed algorithms that enable a peer to reason about trustworthiness of other peers based on past interactions and recommendations. Peers create their own trust network in their proximity by using local information available and do not try to learn global trust information. Two contexts of trust, service, and recommendation contexts, are defined to measure trustworthiness in providing services and giving recommendations. Interactions and recommendations are evaluated based on importance,recentness, and peer satisfaction parameters. Additionally, recommender's trustworthiness and confidence about a recommendation are considered while evaluating recommendations. Simulation experiments on a file sharing application show that the proposed model can mitigate attacks on 16 different malicious behavior models. In the experiments, good peers were able to form trust relationships in their proximity and isolate malicious peers.
Keywords: Peer-to-peer, Malicious peers, Contexts of trust, Proximity, Rust worthiness

ABS No. NCETAT-2024:056 A TRUST FEEDBACK MODEL FOR CONTEXT AND CONTENT PATTERNS GENERATION IN WEB MINING

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Recently, collaborative filtering combined with various kinds of deep learning models is appealing to recommender systems, which have shown a strong positive effect in accuracy improvement. However, many studies related to deep learning model rely heavily on abundant information to improve prediction accuracy, which have stringent data requirements in addition to raw rating data. Furthermore, most of them ignore the interaction effect between users and items when building the recommendation model. To address these issues, we propose DCCR, a deep collaborative conjunctive recommender, for rating prediction tasks that is solely based on the raw ratings. A DCCR is a hybrid architecture that consists of two different kinds of neural network models (i.e., an auto encoder and a multi-layered perceptron). The main function of the auto encoder is to extract the latent features from the perspectives of users and items in parallel, while the multi-layered perceptron is used to represent the interaction between users and items based on fusing the user and item latent features. To further improve the performance of DCCR, an advanced activation function is proposed, which can be specified with input vectors. Extensive experiments conducted with two well-known real-world datasets and performances of the DCCR with varying settings are analysed. The results demonstrate that our DCCR model outperforms other state-of-art methods. We also discuss the performance of the DCCR with additional layers to show the extendibility of our model.

Keywords: deep learning, prediction accuracy, hybrid architecture, DCCR

ABS No. NCETAT-2024:057 HEART DISEASE PREDICTION USING CONVOLUTIONAL NEURAL NETWORK

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In day to day life many factors that affect a human heart. Many problems are occurring at a rapid pace and new heart diseases are rapidly being identified. In today's world of stress Heart, being an essential organ in a human body which pumps blood through the body for the blood circulation is essential and its health is to be conserved for a healthy living. The main motivation of doing this project is to present a heart disease prediction model for the prediction of occurrence of heart disease.Further, this research work is aimed towards identifying the best classification algorithm for identifying the possibility of heart disease in a patient. The identification of the possibility of heart disease in a person is complicated task for medical practitioners because it requires years of experience and intense medical tests to be conducted. The main objective of this significant research work is to identify the best classification algorithm suitable for providing maximum accuracy when classification of normal and abnormal person is carried out. Convolutional neural network (CNN) architecture is used to map the relationship between the indoor PM and weather data to the found values. The proposed method is compared with the state-of-the-art deep neural network (DNN)based techniques in terms of the root mean square and mean absolute error accuracy measures. In addition, support vector machine based classification and K-Nearest Neighbour based classification is also

carried out and accuracy is found out. The applied SVM, KNN and CNN classification helps to predict the heart disease with more accuracy in the new data set. **Keywords:** Convolutional neural network, neural network, K-Nearest, Heart disease.

ABS No. NCETAT-2024:058 AUTOMATED CHATBOT ASSISTANCE SYSTEM USING ARTIFICIAL INTELLIGENCE SYSTEM

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Chatbots are gradually becoming more sophisticated as they can now adapt to new AI features with ease. You can also expect them to recognize user intent efficiently, decode the mood of users instantly, and drive the flow of conversations in tune with customer's emotions. And sentiment analysis is one such feature that makes bots even more powerful in terms of understanding the emotion in the customer messages. In fact, 64% of businesses believe that chat-bots can help them provide a more customized support experience for their customers. You can always leverage the Chabot sentiment analysis feature to easily know if customers are having a good experience withyour Chatbots. This is how AI-powered bots can help you engage customers better and improve their experience with your brand. Sentiment analysis is a subfield of machine learning (ML) and natural language processing (NLP) that can help Chatbots determine emotions from textual data. It's one of the key Chabot features that is used to analyse customer data by mining thoughts, opinions, or sentiments. In this project, a Chabot is developed as academic assistant for institutions. Here all the details regarding department, course, fees structure, hostel and placement can be obtained from the Chabot assistance for the query given by users. Here, the Chabot will autocorrect the users' misspelled words taken from dataset given for categories like department, course, etc. Moreover, fora single given word or a phrase, the Chabot replaces it with the correct question patterns and answers are displayed for that question.

Keyword: Chabot, Machine learning, Natural Language Processing, Artificial Intelligence

ABS No. NCETAT-2024:059 PUBLIC RELIABILITY AND AUTHENTICATION FOR CLOUD RESOURCE AGAINST AUDITORS BEHAVIOR USING BLOCK CHAIN

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Using Cloud Storage, users can remotely store their data and enjoy the on-demand high quality applications and services from a shared pool of configurable computing resources, withoutthe burden of local data storage and maintenance. However, the fact that users no longer have physical possession of the outsourced data makes the data integrity protection in Cloud Computing a formidable task, especially for users with constrained computing resources. Moreover, users shouldbe able to just use the cloud storage as if it is local, without worrying about the need to verify its integrity. Thus, enabling public auditability for cloud storage is of critical importance so that userscan resort to a third party auditor (TPA) to check the integrity of outsourced data and be worry-free. To securely introduce an effective TPA, the auditing process should bring in no new vulnerabilities towards user data privacy, and introduce no additional online burden to user. In this paper, we propose a secure cloud storage system supporting privacy-preserving public auditing. We further extend our result to enable the TPA to perform audits for multiple users simultaneously and

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efficiently. Extensive security and performance analysis show the proposed schemes are provably secure and highly efficient.

Keyword: Third Party Auditor, Cloud Storage, Cloud computing, Data

ABS No. NCETAT-2024:060 CLASSIFICATION OF SKIN CANCER DETECTION USING MACHINE LEARNING

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Skin cancer is considered as one of the most dangerous types of cancers and there is a drastic increase in the rate of deaths due to lack of knowledge on the symptoms and their prevention. Thus, early detection at premature stage is necessary so that one can prevent the spreading of cancer. Skin cancer is further divided into various types out of which the most hazardous ones are Melanoma, Basal cell carcinoma and Squamous cell carcinoma. This project is about detection and classification of various types of skin cancer using machine learning and image processing tools. In the pre- processing stage, dermoscopic images are considered as input. Dull razor method is used to remove all the unwanted hair particles on the skin lesion, then Gaussian filter is used for image smoothing. For noise filtering and to preserve the edges of the lesion, Median filter is used. Since color is an important feature in analyzing the type of cancer, color-based k-means clustering is performed in segmentation phase. Our aim is to test the effectiveness of the projected segmentation technique, extract the foremost appropriate options and compare the classification results with the opposite techniques present within the literature.

Keyword: Machine Learning, Skin cancer, Segmentation, Carcinoma, Image processing

ABS No. NCETAT-2024:061 ADVANCED DETECTION AND MONITORING SYSTEM FOR SPAM ZOMBIES IN COMPUTER NETWORKS

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Compromised machines are one of the key security threats on the Internet; they are often used to launch various security attacks such as spamming and spreading malware, DdoS, and identity theft. Given that spamming provides a key economic incentive for attackers to recruit the large number of compromised machines, we focus on the detection of the compromised machines in a network that are involved in the spamming activities, commonly known as spam zombies. We develop an effective spam zombie detection system named SPOT by monitoring outgoing messages of a network. SPOT is designed based on a powerful statistical tool called Sequential Probability Ratio Test, which has bounded false positive and false negative error rates. In addition, we also evaluate the performance of the developed SPOT system using a two-month e-mail trace collected in a large US campus network. Our evaluation studies show that SPOT is an effective and efficient system in automatically detecting compromised machines in a network. For example, among the 440 internal IP addresses observed in the e-mail trace, SPOT identifies 132 of them as being associated with compromised machines. Out of the 132 IP addresses identified by SPOT, 126 can be either independently confirmed (110) or highly likely (16) to be compromised. Moreover, only seven internal IP addresses associated with compromised machines in the trace are missed by SPOT. In addition, we also compare the performance of SPOT with two other spam zombie detection

algorithms based on the number and percentage of spam messages originated or forwarded by internal machines, respectively, and show that SPOT outperforms these two detection algorithms.
Keyword: SPOT, IP addresses, Ratio Test, Network, Spam zombie

ABS No. NCETAT-2024:062 APPROACH OF SECURED FILE DETECTION USING DATA MINING

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Detecting insider attacks continues to prove to be one of the most difficult challenges in securing sensitive data. Decoy information and documents represent a promising approach to detecting malicious masquerades; however, false positives can interfere with legitimate work and take up client time. We propose generating foreign language decoy documents that are sprinkled withuntranslatable enticing proper nouns such as company names, hot topics, or apparent login information. Our goal is for this type of decoy to serve three main purposes. First, using a language that is not used in normal business practice gives real clients a clear signal that the document is fake, so they waste less time examining it. Second, an attacker, if enticed, will need to exhilarate the document's contents in order to translate it, providing a cleaner signal of malicious activity. Third, weconsume significant adversarial resources as they must still read the document and decide if it contains valuable information, which is made more difficult as it will be somewhat scrambledthrough translation. In this paper, we expand upon the rationale behind using foreign language decoys. We present a preliminary evaluation which shows how they significantly increase the cost to attackers in terms of the amount of time that it takes to determine if a document is real and potentiallycontains valuable information or is entirely bogus, confounding their goal of exhilarating important sensitive information.
Keyword: Data, Decoy information, Attack, Sensitive information, File

ABS No. NCETAT-2024:063 TWEET DATA SEGREGATION AND SEGMENTATION USING BATCH MODE PROCESS

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Twitter has attracted millions of users to share and disseminate most up-to-date information, resulting in large volumes of data produced every day. However, many applications in Information Retrieval (IR) and Natural Language Processing (NLP) suffer severely from the noisy and short nature of tweets. In this paper, we propose a novel framework for tweet segmentation in a batchmode, called HybridSeg. By splitting tweets into meaningful segments, the semantic or context information is well preserved and easily extracted by the downstream applications. HybridSeg finds the optimal segmentation of a tweet by maximizing the sum of the stickiness scores of its candidate segments. The stickiness score considers the probability of a segment being a phrase in English (i.e., global context) and the probability of a segment being a phrase within the batch of tweets (i.e., local context). For the latter, we propose and evaluate two models to derive local context by consideringthe linguistic features and term-dependency in a batch of tweets, respectively. HybridSeg is also designed to iteratively learn from confident segments as pseudo feedback.

Keywords: Information Retrieval, HybridSeg, Segments, Downstream, Natural Language Processing

ABS No. NCETAT-2024:064 PRODUCT ASPECT RANKING AND ITS APPLICATIONS USING SENTIMENT CLASSIFIER FRAMEWORK

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Numerous consumer reviews of products are now available on the Internet. Consumer reviews contain rich and valuable knowledge for both firms and users. However, the reviews areoften disorganized, leading to difficulties in information navigation and knowledge acquisition. This article proposes a product aspect ranking framework, which automatically identifies the important aspects of products from online consumer reviews, aiming at improving the usability of the numerousreviews. The important product aspects are identified based on two observations: 1) the important aspects are usually commented on by a large number of consumers and 2) consumer opinions on the important aspects greatly influence their overall opinions on the product. In particular, given the consumer reviews of a product, we first identify product aspects by a shallow dependency parser and determine consumer opinions on these aspects via a sentiment classifier. We then develop a probabilistic aspect ranking algorithm to infer the importance of aspects by simultaneously considering aspect frequency and the influence of consumer opinions given to each aspect over their overall opinions. We apply product aspect ranking to two real-world applications, i.e., document- level sentiment classification and extractive review summarization, and achieve significant performance improvements, which demonstrate the capacity of product aspect ranking in facilitating real-world applications.
Keywords: Consumer reviews, Product aspect ranking, Algorithm, Review, Sentiment

ABS No. NCETAT-2024:065 OPTIMIZATION OF RESPONSE TIME OF M-LEARNING COMPUTING ENVIRONMENT USING FIRE FREE APPROACH

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Mobile learning (m-learning) is a relatively new technology that helps students learn and gain knowledge using the Internet and Cloud computing technologies. Cloud computing is one of the recent advancements in the computing field that makes Internet access easy to end users. ManyCloud services rely on Cloud users for mapping Cloud software using virtualization techniques. Usually, the Cloud users' requests from various terminals will cause heavy traffic or unbalanced loadsat the Cloud data centres and associated Cloud servers. Thus, a Cloud load balancer that uses an efficient load balancing technique is needed in all the cloud servers. This project proposes a new meta-heuristic algorithm, named the dominant fire fly algorithm, which optimizes load balancing of tasks among the multiple virtual machines in the Cloud server, thereby improving the response efficiency of Cloud servers that concomitantly enhances the accuracy of m-learning systems. The methods and findings used to solve load imbalance issues in Cloud servers, which will enhance the experiences of m-learning users. Specifically, the findings such as Cloud-Structured Query Language(SQL), querying mechanism in mobile devices will ensure users receive their m-learning content without delay; additionally, our method will demonstrate that by applying an effective load balancing

technique would improve the throughput and the response time in mobile and cloud environments. This project proposes a resource provisioning and scheduling strategy for scientific workflows on Infrastructure as a Service (IaaS) and Platform as services clouds (PaaS). This project presents an algorithm based on the Superior Element Multitude Optimization (SEMO), which aims to minimize the overall workflow execution cost while meeting deadline constraints. The main scope of the project is used to analyze best available resource in the cloud environment depend upon the total execution time and total execution cost which is compare between one process to another process. If the provider satisfies the time least time, then the process becomes to termination.

Keywords: Cloud computing, Query Language, SEMO, m-learning, meta-heuristic algorithm

ABS No. NCETAT-2024:066 DETECTION OF MENTAL DISORDERS IN SOCIAL MEDIA NETWORK

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The explosive growth in popularity of social networking leads to the problematicusage. An increasing number of social network mental disorders (SNMDs), such as Cyber-Relationship Addiction, Information Overload, and Net Compulsion, have been recently noted. Symptoms of these mental disorders are usually observed passively today, resulting in delayed clinical intervention. In this project, users argue that mining online social behavior provides an opportunity to actively identify SNMDs at an early stage. It is challenging to detect SNMDs because the mental statuscannot be directly observed from online social activity logs. This approach, new and innovative to the practice of SNMD detection, does not rely on self-revealing of those mental factors via questionnaires in Psychology. Depression detection taken from tweets records are carried out after proper pre-processing steps. In addition, to address the aforementioned issue, this project proposed a depression detection classification model using K-Nearest Neighbor and a Support Vector Machine based classification.

Keywords: Social network mental disorders, Net Compulsion, K-Nearest Neighbor, Support Vector Machine

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ABS No. NCETAT-2024:067 SOFTWARE VULNERABILITY CLASSIFICATION USING SVM AND KNN TECHNIQUES

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Software vulnerabilities are raising the security risks. If any vulnerability is oppressed due to a malicious attack, it will compromise the system's safety. In addition, it may create catastrophic losses. In this project, vulnerability dataset is taken from cve web site and pre-processed. Then the new error description is keyed as input and checked against the dataset and if match found, then the error category is found out. Automatic classification method is thus achieved to manage vulnerabilityin software, and then security performance of the system will be improved. It will also mitigate the risk of system being attacked and damaged. In this project, a new model has been proposed withname automatic vulnerability classification model based on Convolutional Neural Network

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classification algorithms. The model is generated using input layers with 300 neurons, 16 hidden layers and 27 output neurons. Number of epochs is adjusted and accuracy value is improved. Partial description matching is also carried out. SVM and KNN classification is also carried out. The National Vulnerability Database of the United States has been taken to test this new model's effectiveness.
Keywords: Software vulnerability, KNN, Convolutional Neural, Network, Classification

ABS No. NCETAT-2024:068 IMPROVED MECHANISM FOR FAKE CURRENCY DETECTION

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The project entitled as "IMPROVED MECHANISM FOR FAKE CURRENCY DETECTION". An effective code has developed to detect the given Indian rupee as an image. The neural network technique has been implemented to detect the currency. After applying the image input to this project it will show the detected result that is value of money. If it is a fake one it does not given the value of money. It will remain null to display. Counterfeit money is imitation currency produced without the legal sanction of the state or government. Producing or using this fake money isa form of fraud or forgery. Counterfeiting is as old as money itself, and is sufficiently prevalent throughout history that it has been called "the world's second oldest profession.. This has led to the increase of corruption in our country hindering country's growth. Common man became a scapegoat for the fake currency circulation, let us suppose that a common man went to a bank to deposit money in bank but only to see that some of the notes are fake, in this case he has to take the blame. Counterfeiting, of whatever kind, may be that has been occurring ever since humans grasped the concept of valuable items, and there has been an ongoing race between certifier like (banks, for example) and counterfeiter ever since. Some of the effects that counterfeit money has on society include a reduction in the value of real money; and inflation due to more money getting circulated in the society or economy which in turn dampen our economy and growth – an unauthorized artificial increase in the money supply; a decrease in the acceptability of paper money and losses.
Keywords: Neural network, Counterfeiting, Fake, Economy, Fraud or Forgery

ABS No. NCETAT-2024:069 EMBED IMAGE ENCRYPTION USING 126-BIT BASE RANDOM BIT SHIFT TECHNIQUE

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Privacy is a critical issue when the data owners outsource data storage or processing to a third party computing service, such as the cloud. In this project, we identify a cloud computing application scenario that requires simultaneously performing secure watermark detection and privacy preserving multimedia data storage. This proposed technique a compressive sensing (CS)-based frameworkusing secure multiparty computation (MPC) protocols to address such a requirement. In this framework, the multimedia data and secret watermark pattern are presented to the cloud for secure watermark detection in a CS domain to protect the privacy. During CS transformation, the privacy of the CS matrix and the watermark pattern is protected by the MPC protocols under the semi-honest

security model. The expected watermark detection performance in the CS domain, given the target image, watermark pattern, and the size of the CS matrix (but without the CS matrix itself). The correctness of the derived performance has been validated by our experiments. Our theoreticalanalysis and experimental results show that secure watermark detection in the CS domain is feasible. Our framework can also be extended to other collaborative secure signal processing and data-mining applications in the cloud.

Keywords: Multiparty computation, Watermark detection, Secure signal processing

ABS No. NCETAT-2024:070 CAR SALES AND PRICE RECOMMENDATION USING NAÏVE BAYEE MODEL

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Demand forecasting is the major key aspect to successfully manage restaurants, supermarkets and staff canteens. In particular, properly predicting future sales of menu items allows for a precise ordering of cars. This will ensure a low level of pre-consumer food waste, while this is critical to the profitability of the showroom. Hence, this paper is interested in predicting future values of the daily sold quantities of given cars. This project proposes a forecasting approach that is solely based on the data retrieved from sales and allows for a straightforward human interpretation. Therefore, it proposes two generalized models for predicting future sales. In an extensive evaluation, data sets are taken which consists of car price data. The main motivation of doing this project is to present a sales prediction model for the prediction of car price. Further, this research work is aimed towards identifying the best classification algorithm for sales analysis. In this work, data mining classification algorithm called Naïve Bayes is addressed and used to develop a prediction system in order to analyze and predict the sales volume. In addition, various grouping and chart preparation is also made in proposed system for better classification results.

Keywords: Predicting, Price data, Classification algorithm, Naïve Bayes.

ABS No. NCETAT-2024:071 FINANCIAL ANALYSIS AND LOAN PREDICTOR USING DATA MINING TECHNIQUES

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Demand forecasting for loan is the major key aspect to successfully manage bank, insurance and finance companies. In particular, properly predicting loan requirements and eligibility criteria allows for a precise processing of loans. This will ensure a low level of security danger, while this is critical to the profitability of the companies. Hence, this paper is interested in predicting loan provisions to proper people. This project proposes a forecasting approach that issolely based on the data retrieved from past records and allows for a straightforward human interpretation. Therefore, it proposes two generalized models for predicting loan provisions. In an extensive evaluation, data sets are taken which consists of loan prediction data. The main motivation of doing this project is to present a loan prediction model for the prediction of loan giving. Further, this research work is aimed towards identifying the best classification algorithm for loan analysis. In

this work, data mining classification algorithm called Naïve Bayes is addressed and used to develop a prediction system in order to analyze and predict the sales volume. In addition, various grouping and chart preparation is also made in proposed system for better classification results. SVM and KNN classification is also applied in proposed system.

Keywords: Bank, Forecasting, Loan prediction data, Data mining, SVM and KNN

ABS No. NCETAT-2024:072 PARALLEL JOB SCHEDULER WITH REPLICATION STRATEGY IN GRID COMPUTING

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When science and technology advance, the problems encountered become more complicated and need more computing power. In contrast to the traditional notion of using supercomputers, grid computing is proposed. Distributed computing supports resource sharing. Parallel computing supports computing power. Grid computing aims to harness the power of both distributed computing and parallel computing. The goal of grid computing is to aggregate idle resources on the Internet suchas Central Processing Unit (CPU) cycles and storage spaces to facilitate utilization. When human culture advances, current problems in science and engineering become more complicated and need more computing power to tackle and analyze. A supercomputer is not the only choice for solving complex problems any more as a result of the speed-up of personal computers and networks. Grid technology, which connects a number of personal computer clusters with high speed networks, can achieve the same computing power as a supercomputer does, also with a lower cost.However, grid is a heterogeneous system. Scheduling independent tasks on it is more complicated. In order to utilize the power of grid completely, we need an efficient job scheduling algorithm to assign jobs to resources in a grid. This project proposes an Adaptive Scoring Job Scheduling algorithm (ASJS) for the grid environment. Compared to other methods, it can decrease the completion time of submitted jobs, which may compose of computing-intensive jobs and data-intensive jobs.

Keywords: Central Processing Unit, Computing power, Grid technology, ASJS, Data-intensive

ABS No. NCETAT-2024:073 A NEW INTELLIGENCE-BASED APPROACH FOR COMPUTER-AIDED DIAGNOSIS OF DENGUE FEVER

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Identification of the influential clinical symptoms and laboratory features that help in the diagnosis of dengue fever (DF) in early phase of the illness would aid in designing effective public health management and biological surveillance strategies. Keeping this as our main objective, we develop in this project a new computational intelligence-based methodology that predicts the diagnosis in real time, minimizing the number of false positives and false negatives. Our methodology consists of three major components: 1) a novel missing value imputation procedure thatcan be applied on any dataset consisting of categorical (nominal) and/or numeric (real or integer); 2)a relief feature selection for extracting a subset of most influential symptoms that can diagnose the illness; and 3) an neural network for predicting disease. The predictive models developed using our

methodology is found to be more accurate than the state-of-the art methodologies used in the diagnosis of the DF.

Keywords: Diagnosis of dengue fever, Health management, Diagnosis, Novel, Neural network

ABS No. NCETAT-2024:074 A COMPREHENSIVE FAULT PREDICTION BASED ON K-MEANS CLUSTERING ALGORITHM

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Unsupervised techniques like clustering may be used for fault prediction in software modules, more so in those cases where fault labels are not available. In this paper a Quad Tree-based K-Means algorithm has been applied for predicting faults in program modules. The aims of this paper are twofold. First, Quad Trees are applied for finding the initial cluster centers to be input to the K- Means Algorithm. An input threshold parameter δ governs the number of initial cluster centers and by varying δ the user can generate desired initial cluster centers. The concept of clustering gain has been used to determine the quality of clusters for evaluation of the Quad Tree-based initialization algorithm as compared to other initialization techniques. The clusters obtained by Quad Tree-based algorithm were found to have maximum gain values. Second, the Quad Tree based algorithm is applied for predicting faults in program modules. The overall error rates of this prediction approach are compared to other existing algorithms and are found to be better in most of the cases.

Keywords: K-Means algorithm, Quad Tree, fault prediction, cluster

ABS No. NCETAT-2024:075 RELAY NETWORK BASED QUERY PROTOCOL RECOMMENDATION IN UNSTRUCTURED PEER TO PEER NETWORKS

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In unstructured peer-to-peer networks, the average response latency and traffic cost of a query are two main performance metrics. Controlled-flooding resource query algorithms are widely used in unstructured networks such as peer-to-peer networks. In this paper, we propose a novel algorithm named Selective Dynamic Query (SDQ). Based on mathematical programming, SDQ calculates the optimal combination of an integer TTL value and a set of neighbors to control the scope of the next query. Our results demonstrate that SDQ provides finer grained control than other algorithms: its response latency is close to the well-known minimum one via Expanding Ring; in the mean-time, its traffic cost is also close to the minimum. To our best knowledge, this is the first work capable of achieving a best trade-off between response latency and traffic cost.

Keywords: peer-to-peer networks, Selective Dynamic Query, algorithms, traffic cost

ABS No. NCETAT-2024:076 AN ATTRIBUTE BASED CLUSTER MODEL FOR FEATURES SUBSET SELECTION ALGORITHM IN WEB MINING

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Feature selection involves identifying a subset of the most useful features that produces compatible results as the original entire set of features. A feature selection algorithm may be evaluated from both the efficiency and effectiveness points of view. While the efficiency concerns thetime required to find a subset of features, the effectiveness is related to the quality of the subset of features. Based on these criteria, a fast clustering-based feature selection algorithm, FAST, is proposed and experimentally evaluated in this project. The FAST algorithm works in two steps. In thefirst step, features are divided into clusters by using graph-theoretic clustering methods. In the secondstep, the most representative feature that is strongly related to target classes is selected from each cluster to form a subset of features. Features in different clusters are relatively independent; the clustering-based strategy of FAST has a high probability of producing a subset of useful and independent features. To ensure the efficiency of FAST, we adopt the efficient minimum-spanning tree clustering method. The efficiency and effectiveness of the FAST algorithm are evaluated throughan empirical study. Extensive experiments are carried out to compare FAST and several representative feature selection algorithms, namely, FCBF, ReliefF, CFS, Consist, and FOCUS-SF, with respect to four types of well-known classifiers, namely, the probability-based I Bayes, the tree-based C4.5, the instance-based IB1, and the rule-based RIPPER before and after feature selection. The results, on 35 publicly available real-world high dimensional image, microarray, and text data, demonstrate that FAST not only produces smaller subsets of features but also improves the performances of the four types of classifiers.

Keywords: FAST algorithm, Subset, Cluster, I Bayes, Dimensional image

ABS No. NCETAT-2024:077 QUALITY OF SERVICE AWARE WEB SERVICE RECOMMENDATION IN CLOUD NETWORKS

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With increasing presence and adoption of Web services on the World Wide Web, Quality-of-Service (QoS) is becoming important for describing non functional characteristics of Web services. In this paper, we present a collaborative filtering approach for predicting QoS values of Web services and making Web service recommendation by taking advantages of past usage experiences of service users. We first propose a user-collaborative mechanism for past Web service QoS informationcollection from different service users. Then, based on the collected QoS data, a collaborative filtering approach is designed to predict Web service QoS values. Finally, a prototype called WSRec is implemented by Java language and deployed to the Internet for conducting real-world experiments.To study the QoS value prediction accuracy of our approach, 1.5 millions Web service invocation results are collected from 150 service users in 24 countries on 100 real-world Web services in 22 countries. The experimental results show that our algorithm achieves better prediction accuracy than other approaches. Our Web service QoS data set is publicly released for future research.

Keywords: Web services, QoS information, Prediction, User-collaborative, Presence and Adoption

ABS No. NCETAT-2024:078 MULTISTAGE TRUST MECHANISM IN PRIVACY PRESERVING DATA MINING

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Privacy Preserving Data Mining (PPDM) addresses the problem of developing accurate models about aggregated data without access to precise information in individual data record. A widely studied perturbation-based PPDM approach introduces random perturbation to individual values to preserve privacy before data are published. Previous solutions of this approach are limitedin their tacit assumption of single-level trust on data miners. In this work, we relax this assumption and expand the scope of perturbation-based PPDM to Multilevel Trust (MLT-PPDM). In our setting, the more trusted a data miner is the less perturbed copy of the data it can access. Under this setting, a malicious data miner may have access to differently perturbed copies of the same data throughvarious means, and may combine these diverse copies to jointly infer additional information aboutthe original data that the data owner does not intend to release. Preventing such diversity attacks isthe key challenge of providing MLT-PPDM services. We address this challenge by properly correlating perturbation across copies at different trust levels. We prove that our solution is robust against diversity attacks with respect to our privacy goal. That is, for data miners who have access to an arbitrary collection of the perturbed copies, our solution prevent them from jointly reconstructing the original data more accurately than the best effort using any individual copy in the collection. Our solution allows a data owner to generate perturbed copies of its data for arbitrary trust levels on- demand. This feature offers data owners maximum flexibility.

Keywords: Aggregated data, Privacy Preserving Data Mining, Data miners, Multilevel Trust

<u>ABS No. NCETAT-2024:079</u> SERVICE LEVEL OBJECTIVE MODEL FOR CLOUD STORAGE SERVICE ACROSS DISTRIBUTED CLOUD ENVIRONMENT

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The end of this decade is marked by a paradigm shift of the industrial information technology towards a pay-per-use service business model known as cloud computing. Cloud data storage redefines the security issues targeted on customer's outsourced data (data that is not stored/retrieved from the costumers own servers). In this work we observed that, from a customer's point of view, relying upon a solo SP for his outsourced data is not very promising. In addition, providing better privacy as well as ensuring data availability, can be achieved by dividing the user's data block into data pieces and distributing them among the available SPs in such a way that no less than a threshold number of SPs can take part in successful retrieval of the whole data block. In this paper, we propose a secured cost-effective multi-cloud storage

(SCMCS) model in cloud computing which holds an economical distribution of data among the available SPs in the market, to provide customers with data availability as well as secure storage. Our results show that, our proposed model provides a better decision for customers according to their available budgets.

Keywords: Cloud data, Cloud computing, Data block, Data pieces

ABS No. NCETAT-2024:080 IMPLEMENTATION OF PIVOT OPERATOR AGGREGATION IN SQL DATA SETS FOR DATA MINING

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Preparing a data set for analysis is generally the most time consuming task in a data mining project, requiring many complex SQL queries, joining tables, and aggregating columns. Existing SQL aggregations have limitations to prepare data sets because they return one column per aggregated group. In general, a significant manual effort is required to build data sets, where a horizontal layoutis required. We propose simple, yet powerful, methods to generate SQL code to return aggregated columns in a horizontal tabular layout, returning a set of numbers instead of one number per row. This new class of functions is called horizontal aggregations. Horizontal aggregations build data sets with a horizontal denormalized layout (e.g., point-dimension, observation variable, instance-feature), which is the standard layout required by most data mining algorithms. We propose three fundamental methods to evaluate horizontal aggregations: CASE: Exploiting the programming CASE construct; SPJ: Based on standard relational algebra operators (SPJ queries); PIVOT: Using the PIVOT operator, which is offered by some DBMSs. Experiments with large tables compare the proposed query evaluation methods. Our CASE method has similar speed to the PIVOT operator and it is muchfaster than the SPJ method. In general, the CASE and PIVOT methods exhibit linear scalability, whereas the SPJ method does not.

Keywords: Data mining, CASE, PIVOT operator, SQL aggregations, Horizontal, Algebra operators

ABS No. NCETAT-2024:081 PATTERN BASED ASSOCIATION RULE MINING

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In this project, a pattern-based stock data mining approach which transforms the numeric stock data to symbolic sequences, carries out sequential and non-sequential association analysis and uses the mined rules in classifying/predicting the further price movements is proposed. Two formulations of the problem are considered. They are intra-stock mining which focuses on finding frequently appearing patterns for the stock time series itself and inter-stock mining which discovers the strong inter-relationship among several stocks. Three different methods are proposed for carrying out associative classification/prediction, namely, Best Confidence, Maximum Window Size andMajority Voting. They select the mined rule(s) and make the final prediction. A modified Apriori algorithm is also proposed to mine the frequent symbolic sequences in intra-stock mining and the frequent symbol-sets in inter-stock mining.

Keywords: Pattern, Data mining, Price movements, Classification, Voting

ABS No. NCETAT-2024:082 CROWD MANAGEMENT USING AUTOMATED PATH FINDING ROBOT

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This project describes a model for simulating crowds in real time. We deal with thehierarchy of the crowd, groups and individuals. The groups are the most complex structure that can be controlled in different degrees of autonomy. The autonomy means that the virtual agents are independent of the user intervention. Depending on the complexity of the simulation, some simple behaviours can be sufficient to simulate crowds. Otherwise, more complicated behaviours rules can be necessary in order to improve the realism of the animation. We present two different ways for controlling crowd behaviours: - by defining behaviour rules, to give intelligence to the agent. By providing an external control to guide crowd behaviours, this control is done by the user or by an autonomous agent called the guide. The main contribution of our approach is to combine these two ways of behaviours (autonomous, guide) in order to simulate the evacuation of a crowd in emergencysituations. Many strategies of evacuation have been implemented and we will demonstrate that in most situations, the guided method decrease the average escape time and increase the chance of survival in emergency situation.

Keywords: Crowd, Autonomy, Crowd behaviours, Virtual agents, Survival

ABS No. NCETAT-2024:083 AN APPROACH TOWARDS COEFFICIENTS BASED LOSSY COMPRESSION AND ITERATIVE RECONSTRUCTION IN IMAGE PROCESSING

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This work proposes a novel scheme for lossy compression of an encrypted image with flexible compression ratio. A pseudorandom permutation is used to encrypt an original image, and the encrypted data are efficiently compressed by discarding the excessively rough and fine information of coefficients generated from orthogonal transform. After receiving the compressed data, with the aid of spatial correlation in natural image, a receiver can reconstruct the principal content of the original image by iteratively updating the values of coefficients. This way, the higher the compression ratio and the smoother the original image, the better the quality of the reconstructed image.

Keywords: Novel scheme, Lossy, encrypted, Spatial correlation, Compression ratio

ABS No. NCETAT-2024:084 INTEGRATED QUERY REORGANIZATION PROCESS FOR EFFICIENT BOOLEAN INFORMATION RETRIEVAL

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In the information filtering paradigm, clients subscribe to a server with continuous queries that express their information needs and get notified every time appropriate information is published. To perform this task in an efficient way, servers employ indexing schemes that support fast matches of the incoming information with the query database. Such indexing schemes involve (i) main-memory trie-based data structures that cluster similar queries by capturing common elements between them and (ii) efficient filtering mechanisms that exploit this clustering to achieve high throughput and low filtering times. However, state-of-the-art indexing schemes are sensitive to the query insertion order and cannot adopt to an evolving query workload, degrading the filtering performance over time. In this project, we present an adaptive trie-based algorithm that outperforms current methods by relying on query statistics to rocess is the query database. Contrary to previousapproaches, we show that the nature of the constructed tries, rather than their compactness, is thedetermining factor for efficient filtering performance. Our algorithm does not depend on the order ofinsertion of queries in the database, manages to cluster queries even when clustering possibilities arelimited, and achieves more than 96 percent filtering time improvement over its state-of-the-artcompetitors. Finally, we demonstrate that our solution is easily extensible to multi-core machines. **Keywords:** Filtering paradigm, Query database, Cluster, Adaptive trie-based algorithm, Multi-core machines

ABS No. NCETAT-2024:085 IMAGE FORGERY DETECTION USING CONVENTIONAL NEURAL NETWORK IN NEURAL NETWORKS

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Day for day it becomes easier to temper digital images. Thus, people are in need of various forgery image detection. This project present forgery image detection techniques for two of the most common image tampering techniques; copy-move and splicing. This project use match points technique after feature extraction. The detection of tampered regions is done through searching for very similar regions. Convolutional neural network (CNN) is the machine-learning algorithm which achieved substantial results in image detection and classification. This project develops a new CNN architecture to classify original and masked images checks whether the image is masked or not. With R) good generalization capability and ii) good execution speed, newly developed CNN architecture is being used as an effective decision-support tool for radiologists in diagnostics. Python is used for development of the project. Here we are extracting the image features and analyzing it to detect the forged images and also determine the type of the forgery.

Keywords: Convolutional neural network, Digital images, Convolutional, Radiologists, Forgery

ABS No. NCETAT-2024:086 CUSTOMER SENTIMENT ANALYSIS BASED ON LATENT DIRICHLET ALLOCATION (LDA) TECHNIQUE

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With the rapid development of e-commerce, most customers express their opinions on various kinds of entities, such as products and services. Reviews generally involves specific product feature along with opinion sentence. These reviews have rich source of information for decision making and sentiment analysis. Sentiment analysis refers to a classification problem where the main focus is to predict the polarity of words and then classify them into positive, negative and neutral feelings with the aim of identifying attitude and opinions. This paper describe Latent Dirichlet Markov Allocation Model (LDMA), a new generative probabilistic topic model, based on Latent Dirichlet Alloction (LDA) and Hidden Markov Model (HMM), which emphasizes on extracting topics from consumer reviews. After the topic extraction, use SentiWordNet dictionary for sentiment classification. Experimental results show that the proposed technique overcomes the previous limitations andachieves higher accuracy when compared to similar techniques.

Keywords: E-commerce, Products, LDMA, Customers, Hidden Markov Model, EntiWordNet

ABS No. NCETAT-2024:087 DETECTION AND CLASSIFICATION OF FRUIT DISEASES USING IMAGE PROCESSING TECHNIQUES

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The project has entitled as **"FRUIT DISEASE IDENTIFICATION".** Fruit diseases are a major problem in economic and production losses in the agricultural industry worldwide. In this project, an image processing approach is proposed for identifying passion fruit diseases based on convolutional neural network. According to the CNN algorithm, fruit image details are taken by the existing packages from the front end used in this project. However, it can take a few moments. So, this proposed system can be used to identify fruit diseases quickly and automatically.

Keywords: Diseases, Economic and production, image processing, CNN algorithm

ABS No. NCETAT-2024:088 BLOCK MISBEHAVING MODEL ANONYMIZING NETWORKS

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Anonymizing networks such as Tor allow users to access Internet services privately by using a series of routers to hide the client's IP address from the server. The success of such networks, however, has been limited by users employing this anonymity for abusive purposes such as defacing popular Web sites. Web site administrators routinely rely on IP-address blocking for disabling access to misbehaving users, but blocking IP addresses is not practical if the abuser routes through an anonymizing network. As a result, administrators block all known exit nodes of anonymizing networks, denying anonymous access to misbehaving and behaving users alike. To address this problem, we present Nymble, a system in which servers can "blacklist" misbehaving users, thereby blocking users without compromising their anonymity. Our system is thus agnostic to different servers' definitions of misbehavior—servers can blacklist users for whatever reason, and the privacy of blacklisted users is maintained.

Keywords: Networks, IP address, Web site, Anonymizing, Blacklist

ABS NONCETAT-2024:089 IMAGE RE-RANKING BASED GEOSPATIAL DATA NETWORKS

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Social media sharing Websites allow users to annotate images with free tags, which significantly contribute to the development of the web image retrieval. Tag-based image search is an important method to find images shared by users in social networks. However, how to make the top ranked result relevant and with diversity is challenging. This project, proposes a topic diverse ranking approach for tag-based image retrieval with the consideration of promoting the topic coverage performance. First, construct a tag graph based on the similarity between each tag. Then, the community detection method is conducted to mine the topic community of each tag. After that, inter-community and intra-community ranking are introduced to obtain the final retrieved results. In the inter-community ranking process, an adaptive random walk model is employed to rank the community based on the multi-information of each topic community. Besides, we build an inverted index structure for images to accelerate the searching process.
Keywords: Web image, Ranking approach, Community detection, Social networks, Structure for images

ABS No. NCETAT-2024:090 NUMERICAL OPTIMIZATION OF CENTROID BASED ACTIONABLE 3D SUBFACE CLUSTERING

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Actionable 3D subspace clustering from real-world continuous-valued 3D (i.e. *object-attribute-context*) data promises tangible benefits such as discovery of biologically significant protein residues and profitable stocks, but existing algorithms are inadequate in solving this clusteringproblem; most of them are not actionable (ability to suggest profitable or beneficial actions to users), do not allow incorporation of domain knowledge and are parameter sensitive, i.e. the wrong thresholdsetting reduces the cluster quality. Moreover, its 3D structure complicates this clustering problem. Wepropose a centroid-based actionable 3D subspace clustering framework, named CATSeeker, which allows incorporation of domain knowledge, and achieves parameter insensitivity and excellent performance through a unique combination of singular value decomposition, numerical optimization and 3D frequent itemset mining.

Keywords: Subspace, Data promises, Cluster, Itemset, Domain, Optimization, Decomposition

ABS No. NCETAT-2024:091 IMPROVED SOCIAL MEDIA OPTIMIZATION (SMO) AND SPAM DATA FILTERING IN SOCIAL NETWORKS

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Email is one of common communication methods between people on the Internet. However, the increase of email misuse/abuse has resulted in an increasing volume of spam emails over recent years. In this e-world, most of the transactions and business is taking place through e-mails. Nowadays, email becomes a powerful tool for communication as it saves a lot of time and cost. But, due to social networks and advertisers, most of the emails contain unwanted information called spam.Even though lot of algorithms has been developed for email spam classification, still none of the algorithms produces 100% accuracy in classifying spam email. This project proposes a Decision tree and SMO algorithm to classify the mails. The Proposed method used SpamBase Dataset for training purpose. The experimental result shows that the SMO gives better accuracy then the Decision Tree.

Keywords: Communication, Email, Social networks, Accuracy, Spam

ABS No. NCETAT-2024:092 IMPLEMENTATION OF COST EFFECTIVE MULTI CLOUD STORAGE IN PUBLIC CLOUDS

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Many Cloud Service Providers (CSPs) provide data storage services with datacenters distributed worldwide. These datacenters provide different Get/Put latencies and unit prices forresource utilization and reservation. Thus, when selecting different CSPs' datacenters, cloud customers of globally distributed applications (e.g., online social networks) face two challenges: (i) how to allocate data to worldwide datacenters to satisfy application SLO (service level objective) requirements including both data retrieval latency and availability, and (ii) how to allocate data and reserve resources in datacenters belonging to different CSPs to minimize the payment cost. To handlethese challenges, we first model the cost minimization problem under SLO constraints using integer programming. Due to its NP-hardness, we then introduce our heuristic solution, including a dominant-cost based data allocation algorithm and an optimal resource reservation algorithm. We finally introduce an infrastructure to enable the conduction of the algorithms. Our trace-driven experiments on a supercomputing cluster and on real clouds (i.e., Amazon S3, Windows Azure Storage and Google Cloud Storage) show the effectiveness of our algorithms for SLO guaranteed services and customer cost minimization.

Keywords: Cloud Service Providers , SLO, Datacenters, Trace-driven

ABS No. NCETAT-2024:093 BUDGET BASED SECURE ROUTING PROTOCOL DESIGN FOR WIRELESS SENSOR NETWORKS

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Lifetime optimization and security are two conflicting design issues for multi-hop wireless sensor networks (WSNs) with non-replenish able energy resources. In this paper, we first propose a novel secure and efficient Cost-Aware Secure Routing (CASER) protocol to address these two conflicting issues through two adjustable parameters: energy balance control (EBC) and probabilistic

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based random walking. We then discover that the energy consumption is severely disproportional to the uniform energy deployment for the given network topology, which greatly reduces the lifetime of the sensor networks. To solve this problem, we propose an efficient non-uniform energy deployment strategy to optimize the lifetime and message delivery ratio under the same energy resource and security requirement. We also provide a quantitative security analysis on the proposed routingprotocol. Our theoretical analysis and OPNET simulation results demonstrate that the proposed CASER protocol can provide an excellent trade off between routing efficiency and energy balance, and can significantly extend the lifetime of the sensor networks in all scenarios. For the non-uniform energy deployment, our analysis shows that we can increase the lifetime and the total number of messages that can be delivered by more than four times under the same assumption. We alsodemonstrate that the proposed CASER protocol can achieve a high message delivery ratio while preventing routing trace back attacks.

Keywords: wireless sensor networks, CASER, Protocol, deployment, energy

ABS No. NCETAT-2024:094 SPEECH REGONITION

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Speech recognition uses an acoustic and modeling algorithm to execute its task. It allows interaction between computer interfaces and a natural human voice. Speech recognition is one of the current topics of discussion in the twenty-first century. The advent of technological gadgets in modern society has become rampant through vigorous efforts made by scientists in realizing their aimof developing an algorithm that will allow machines to interact with human beings. This paper summarizes the theoretical algorithms in the development of speech recognition. Firstly, we introduce the specific process of speech recognition, including biometrics acquisition, preprocessing, feature extraction, biometrics pattern matching and recognition results. Besides, we emphatically introduce feature extraction and matching recognition algorithm. Speech recognition is based on the voice as the research object. Speech recognition allows the machine to turn the speech signal into textor commands through the process of identification and understanding, and also makes the function of natural voice communication. Speech recognition involves many fields of physiology, psychology, linguistics, computer science and signal processing, and is even related to the person's body language,and its ultimate goal is to achieve natural language communication between man and machine.

Keywords: Interaction between computer interfaces and natural human voice, Biometrics acquisition, Feature extraction, Signal processing, Natural language communication between man and machine.

ABS No. NCETAT-2024:095 PLACEMENT PREDICTION USING MACHINE LEARNING

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In the realm of higher education, predicting and enhancing student placement outcomes is of paramount importance for academic institutions and students alike. This research introduces smart placement, a machine learning-based predictive model designed to forecast student success in placement processes. Leveraging historical placement data, academic performance metrics, and

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relevant personal attributes, smart placement utilizes advanced machine learning algorithms to provide insightful predictions for students' likelihood of securing placements. Machine learning algorithms, such as decision trees, support vector machines, and ensemble methods, are trained on a labeled dataset consisting of historical placement outcomes. The model's training involves optimizing hyper parameters and employing cross-validation techniques to ensure robust performance. Theresulting smart placement model offers a reliable and interpretable tool for institutions to assess and improve their students' placement potential. The Model Offers Insights Into Areas Where Students May Benefit From Additional Support Or Skill Development, Facilitating Timely Interventions To Enhance Their Employability.

Keywords: Predictive, Machine Learning, Decision Trees

ABS No. NCETAT-2024:096 ABANDONED PERSON DETECTION FROM VIDEO SURVEILLANCE USING DEEP LEARNING

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Video surveillance systems play a pivotal role in ensuring public safety and security, but the sheer volume of data generated poses a significant challenge in monitoring and analysing the vast visual information. This research addresses the critical issue of abandoned person detection in video surveillance through the application of deep learning techniques. The proposed model employs automatically identify instances of individuals left unattended in public spaces, facilitating timely intervention and response by security personnel. The methodology involves the collection of diverse train video, comprising both indoor and outdoor environments. These data capture various scenarios to ensure the robustness and adaptability of the deep learning model. This architecture is trained on annotated data to learn distinctive features associated with abandoned individuals, considering factors such as motion patterns, object interactions, and scene context. The study also addresses ethical considerations, emphasizing the importance of privacy preservation and responsible data usage in video surveillance. The proposed model is designed to respect individual privacy while enhancing public safety. The significance of this research lies in its potential to contribute to the development of intelligent video surveillance systems capable of autonomously detecting and alerting security personnel to abandoned persons. The outcomes aim to empower security infrastructure, reduceresponse times, and ultimately enhance public safety in various environments, including transportation hubs, shopping centres, and public events.

Keywords: Video surveillance , Deep learning, Detecting, Motion patterns.

ABS No. NCETAT-2024:97 ARTIFICIAL INTELLIGENCE

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The elements of a Knowledge Base consist of independently valid (or at least plausible) chunks of information. The system must automatically organize and utilize this information to solve the specific problems that it encounters. This organization process can be generally characterized as a Search directed toward specific goals. The search Quick prevalence of artificial intelligence (AI)

technologies raise the standards for all-round qualities of students, requiring them to improve their computation thinking, programming abilities and interpersonal skills, which account for an important part of extension of students' media literacy in this intelligent world. The major problem areas addressed in A.I. can be summarized as Perception, Manipulation, Reasoning, Communication, and Learning. Perception is concerned with building models of the physical world from sensory input (visual, audio, etc.). Manipulation is concerned with articulating appendages (e.g., mechanical arms, locomotion devices) in order to effect a desired state in the physical world.

Keywords: Intelligent Robot, Intelligent sensors, Encoding, Knowledge engineering, Artificial Intelligence, Computerized Monitoring, Automatric Control.

ABS No. NCETAT-2024: 098   VISION-BASED ROBUST LANE DETECTION AND TRACKING IN CHALLENGING CONDITIONS

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Efficient and accurate lane detection and tracking in dynamic and intricate environments are crucial for autonomous vehicles and advanced driver assistance systems. This paper presents an enhanced vision-based approach that addresses the challenges posed by complex scenarios such as varying road conditions, diverse lighting, and diverse traffic patterns. Leveraging advanced computer vision techniques, including deep learning algorithms and sensor fusion methodologies, the proposed system achieves robust lane detection and tracking accuracy even in challenging conditions. Leveraging a multi-step process, our method first pre-processes input frames to enhance lane features, minimizing noise and optimizing edge detection. Subsequently, the Hough Transform is employed to identify lane lines, enabling robust detection even amidst challenging conditions such asocclusion, varying lighting, and diverse road markings. Our system demonstrates improved performance in accurately identifying lane boundaries and maintaining tracking stability in complex scenarios.

Keywords:

ABS No. NCETAT-2024:099 MACHINE LEARNING

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The machine learning field, which can be briefly defined as enabling computers make successful predictions using past experiences, has exhibited an impressive development recently with the help of the rapid increase in the storage capacity and processing power of computers. Together with many other disciplines, machine learning methods have been widely employed in bioinformatics. In this chapter, we first review the fundamental concepts of machine learning such as types of machine learning, algorithm and its types, structure of machine learning and Applications. Then, we point out the main issues of designing machine learning experiments and their performance evaluation. Finally, we introduce some supervised learning methods. Machine learning is a branch of artificial intelligence that empowers computers to learn patterns and make predictions or decisions without explicit programming.

Keywords: Artificial Intelligence ,.Deep Learning ,Training Set ,Testing Set ,Regression

ABS NONCETAT-2024:100 SPEECH RECOGNITION

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Speech recognition is based on the voice as the research object. Speech recognition allows the machine to turn the speech signal into text or commands through the process of identification and understanding, and also makes the function of natural voice communication. Speech recognition involves many fields of physiology, psychology, linguistics, computer science and signal processing, and is even related to the person's body language, and its ultimate goal is to achieve natural language communication between man and machine. The speech recognition technology is gradually becoming the key technology of the IT man-machine interface .The paper describes the development of speech recognition technology and its basic principles, methods, reviewed the classification of speech recognition systems and voice recognition technology, analyzed the problems faced by the speech recognition.

Keywords: Audio input, Feature extraction, Pattern matching , Language modelling, Output generation

ABS No.NCETAT-2024:101 AI HARDWARE

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Artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems. AI hardware refers to the specialized computational devices and components, such as GPUs, TPUs, and NPUs, that facilitate and accelerate the processing demands of artificial intelligence tasks, playing a pivotal role alongside algorithms and software in the AI ecosystem. Specialized computer hardware is often used to execute artificial intelligence (AI) programs faster, and with less energy, such as Lisp machines, neuromorphic engineering, event cameras, and physical neural networks. As the market for AI hardware is dominated by GPUs. The CPU plays a pivotal rolein managing the overall computational workload, and its specifications can significantly impact the performance of your AI training tasks. Our recommendations would be from these platforms: AMD EPYC or Intel Xeon Scalable for Servers. Intel Workstations.AI is the ability of a machine to display human-like capabilities such as reasoning, learning, planning and creativity.

Keywords: Stramling, Field Programmable gate, Infrastructure, Graphcore, Sweeping .

ABS No.NCETAT-2024:102 DATA ANALYTICS (DA)

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Data analytics is the science of analyzing raw data to make conclusions about information. Data analytics is the soul of the internet of Things (IoT) technology. This is because the use of IoT is

beneficial only if the data collected by millions of sensors can be interpreted in some way. Analytics is the discovery, interpretation, and communication of meaningful patterns. Software data analytics is key for helping stakeholders make decisions, and thus establishing a measurement and data analysis program is a recognized. Data Analysis is the process of systematically applying statistical and/or logical techniques to describe and illustrate, condense and recap, and evaluate data. Data analytics techniques enable a business to take raw data and uncover patterns to extract valuable insights. As a result, data analysis helps companies make informed decisions, create a more effective marketing strategy, improve customer experience, streamline operations, among many other things. Data analytics is the process of turning unprocessed data into insightful knowledge that can be put to use.

Keywords: Collecting data, Data analysis, Improving Processe, Building a data-driven culture .

ABS No. NCETAT-2024:103 LEVERAGING DEEP LEARNING FOR ENHANCED ROBOTICS: A PROJECT PROPOSAL

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In recent years, the integration of deep learning techniques with robotics has led to significant advancements in various applications, from industrial automation to autonomous vehicles. Thisreport presents a comprehensive project proposal aimed at harnessing the power of deep learning to enhance robotics capabilities. The project aims to address the increasing demand for intelligent and adaptable robotic systems by exploring the integration of convolutional neural networks (CNNs), recurrent neural networks (RNNs), and reinforcement learning (RL) algorithms into robotics applications. The proposed project encompasses objectives related to perception and sensing, control and planning, human-robot interaction, and learning and adaptation. By leveraging simulation environments and real-world robot platforms, the project seeks to validate the effectiveness and scalability of the proposed deep learning techniques. Emphasis will be placed on open-source software frameworks and collaborative development to foster community engagement and accelerate knowledge sharing in the field of robotics and deep learning.

Keywords: Convolutional Neural Networks (CNNs), Recurrent Neural Networks (RNNs)

ABS No.NCETAT-2024:104 NATURAL LANGUAGE PROCESSING

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Natural language processing is the branch of computer science and more specifically, the branch of artificial intelligence concerned with giving computers the ability to understand text and spoken words in much the same way human beings can. The ultimate goal of natural language processing is to help computers understand as well as the humans. The technology is playing a crucial role in Automatic Text Summarization, Automatic question-answering system, Analyze text data, etc. The main intention of NLP is to built systems that are able to make sense of text and then automatically execute tasks like spell-check, topic classification and so on. It has the role of translating the text from one language to another language(i.e., Machine language) and also responds to spoken commands. Natural language processing has the real time applications such as chatbots, sentiments analysis, translation, predictive text, social media measurement, machine translation and so on. It has

several steps to analyze written and spoken language. NLP has several benefits like, it perform large-scale analysis, g etting a more objective and accurate analysis, and improves customer satisfaction. Some of its disadvantages can be explained as it is unpredictable, it may not show context and is built for a single and specific task only.

Keywords: Sentiments Analysis, Predictive Text.

ABS No. NCETAT-2024:105 COVID-19 (CORONA VIRUS) TESTING MANAGEMENT SYSTEM

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The Coronavirus Disease (COVID-19) pandemic has impacted the economy, livelihood, and physical and mental well-being of people worldwide. The present study provides an overview of the coronavirus disease 2019 (COVID-19) outbreak which has rapidly extended globally within a short period. COVID-19 is a highly infectious respiratory disease caused by a new coronavirus known as SARS-CoV-2 (severe acute respiratory syndrome-coronavirus-2). SARS-CoV-2 is different from usual coronaviruses responsible for mild sickness such as common cold among human beings. It is crucial to understand the impact and outcome of this pandemic. Conducting numerous, rapid, and reliable PCR tests for SARS-CoV-2 isessential for our ability to monitor and control the current COVID-19 pandemic. As a solution to the aforementioned problem, a website implementation is reported here. The title of this web application is COVID-19 TESTING MANAGEMENT SYSTEM.

Keywords: Coronavirus Disease, SARS-CoV-2, Pandemic, PCR tests

ABS No. NCETAT-2024:106 THE AUTOMATIC TIME-TABLE GENERATOR USING GENETIC ALGORITHM

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In this article we look at the different ways scientists use genetic algorithms to create programs. Opti mized genetic algorithms can be used in conjunction with heuristics to design and build an organizat ion in real time. Stakeholders in the development process are teachers and students. Effective use of infrastructure is the main aim of the authors. Actions should include challenges, transitions and fitne ss activities. In genetic algorithms, each individual is characterized by a fitness function. After analy sis, if the fitness is higher, it means the solution is better, and then according to their fitness, parents are selected to produce the offspring. New features where people with strong bodies have more abili ties. The aim of this project is to develop a design that will create a valid schedule using
   rocess istic c operators.

Keywords: Rule-Based Agents, Genetic Algorithm, Fitness Function, Timetable Generator, Heuristic Approach.

ABS No. NCETAT-2024:107 THE ROLE OF ARTIFICIAL NEURAL NETWORK IN THE PREOCESS OF VARIOUS CANCER PREDICTION- A COMPARATIVE STUDY

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Artificial Intelligence (AI)-a rapidly growing and emerging technology has proved to have a wide range of applications in medicine and health care. Artificial intelligence has aided in the advancementof healthcare research. As a form of artificial intelligence, artificial neural networks (ANNs) have the advantages of adaptability, parallel processing capabilities, and non-linear processing. This technology serves the field of medicine and its updated features increases the advantages over the discipline of medicine. Especially in detecting many precarious and malignancy diseases, and cancer is one among an incurable perilous, a life-threatening disease. A cancer is a group of cells that have grown out of control in the body. They can spread rapidly to any part of the body. The most common types of cancer are breast cancer, lung cancer, skin cancer and blood cancers (leukaemia and lymphoma). According to the report from World Health Organization (WHO), there are millions and millions of people suffering from the different type of cancer disease across the world, no matter what the age group is, and the survival rate is very low. Detecting cancerous cells and providing treatment at an early stage is quite difficult. But by the era of artificial intelligent and its techniques has given a new hope and scope among the physicians and healthcare decision-makers to decreasethe risk rate and by the early stage they can handle the malignancy and disease up to the reduced cost.Neural networks (NN) are currently a burning research area in medical science, especially in the areas of cardiology, radiology, oncology, urology and etc. By using visual, biological, electronic health records, datasets and scan report data as the sole input source, pre-trained neural networks techniques and methods have been heavily employed for the identification of various malignancies. In this paper, we are surveying how the artificial neural network technologies are used for identifying and detecting classification of different types of cancer. The proposed work clarifies the importanceof ANN and its role in predicting various cancer diseases and in terms of cost effective and user friendly system for processes and approaches for medical diagnostic.

Keywords: Artificial intelligence, Artificial neural network, Cancer, Neural network, Prediction.

ABS No.NCETAT-2024:108 ACCURATE AND PRIVACY-PRESERVING PERSON LOCALIZATION USING FEDERATED-LEARNING AND THE CAMERA SURVEILLANCE SYSTEMS OF PUBLIC PLACES-REVIEW

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In this research, we offer a precise and privacy-preserving approach that uses public place camera surveillance systems to help law enforcement locate people of interest. We employ a more precise method by training a machine learning model, as opposed to the current approaches that use the embedding vectors storing face information to find people using the Euclidean distance. The architecture of the model makes it efficient to run over encrypted data. In particular, three parties carry out the model in the following ways. In every public space, an embedding vector is calculated for every visitor's picture, which is then fed into a neural network. The output is then encrypted using a modified inner product encryption technique, and the ciphertext is transmitted to a cloud server. The law enforcement organization uses the photos of people of interest to carry out the same procedures. Ultimately, the server computes the inner product of the two vectors over encrypted data using these ciphertexts to assess the final layer of the model. Without having to learn the vectors, the cryptosystemallows the server to calculate the inner product of two vectors using their ciphertexts. We illustrate the privacy preservation capability of our method with a rigorous proof and analysis.

Keywords: Privacy-preservation, security, person localization inner product over encrypted data, surveillance systems.

ABS No. NCETAT-2024:109 LOAN APPROVAL PREDICTION SYSTEM USING MACHINE LEARNING-REVIEW

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In the current financial environment, maintaining the soundness of lending institutions and encouraging good financial practices depend heavily on the quick and accurate evaluation of loan applications. In order to improve the speed and accuracy of the loan approval process, this project proposes a machine learning-based loan approval prediction system. The potential for revolutionizing the lending sector through streamlined decision-making procedures, less manual burden, and reduced risks associated with faulty assessments exists with the introduction of this loan approval prediction system. Additionally, the system provides accountability and transparency, giving applicants and financial institutions useful information about the variables affecting loan approval. Consequently, it helps to build a data-driven, equitable, and more effective lending ecosystem.

Keywords: Machine learning, Data, Loan, Training, Testing, Prediction

ABS No.NCETAT-2024:110 TRAFFIC SIGNS RECOGNITION SYSTEM USING CNN IN MACHINE LEARNING -REVIEW

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The Traffic Sign Recognition System (TSRS) has the potential to be a major contributor to traffic safety, artificial driver aid, self-driving cars, and traffic surveillance. Recognizing traffic signs is necessary to overcome traffic-related challenges. There are two components to the road signalling

system: recognition and local design. When navigating the localization section, A rectangular area is constructed to find and identify the traffic sign region. Subsequently, the traffic result for the rectangle box identification feature showed that the mark was located in that specific area. We outline a path toward a road sign recognition system in this work. Here, we focused on the chosen signal in order to acquire road signs and serve as an identifying tool. In order to deliberately identify and recognize traffic symptoms, we have employed convolutional neural networks (CNN) and vector support machines (SVM). SVM accuracy of 98.33% was found using an 80:20 train to test data ratio. However, the accuracy of the test result on CNN was 96.40%.

Keywords: Image Processing, SVM, CNN, Traffic Signs.

ABS No. NCETAT-2024:111 SUSTAINABLE AGRICULTURE: RESOURCE MANAGEMENT WITH AI AND IOT ADVANCEMENTS

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Agriculture is one of the furthermost occupations in the world. Food supply to people in the universe is at major risk due to population growth, climate change, labour demand, resource scarcity and land urbanization. In recent days, agricultural field faces lot of challenges, due to lack of awareness on technological advancements, to overcome these issues farmers adopting the hybrid seeds, synthetic fertilizers and pesticides to rise the production. By utilizing the synthetic fertilizers and pesticides, a resources like land, soil, and water are contaminated. Consequently, the most of the farmers are struggling to manage the resources effectively. These problems were diminished by using modern technology and creating awareness among the farmers about the right usage of fertilizers. For effective management of agriculture resources and also improving crop yield several technologies trends have paved the way. A convergence of Artificial Intelligence (AI) and Internet of Things (IoT) technologies isrevolutionizing agriculture, offering numerous avenues for improved agricultural practices right from crop selection till harvesting with higher crop yield. This paper presents the significance of AI in the management of essential natural resources of agriculture. Additionally, it explores the scope of AI and IoT in monitoring and controlling agricultural resources, aiming to sustainable practices in the agricultural sector.

Keywords:Agriculture, Farming, Natural Resources, Artificial Intelligence, Internet of Things

ABS No. NCETAT-2024:112 GENERATIVE AI IN VIRTUAL REALITY

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Generative AI in virtual reality involves using algorithms to create immersive and dynamic virtual environments. This technology leverages machine learning models, such as generative adversarial networks (GANs) to generate realistic and interactive content with VR spaces. By combining AI's ability to create novel content with the immersive nature of VR , users can experience unique and lifelike virtual worlds that adapt and respond to their interactions , enhancing the overall realism an engagement of the virtual experience. It provides context on the current state of both generative AI and

VR technology. Provides examples of practical applications including training stimulations educational settings and entertainment. Includes relevant case studies demonstrating successful implementations of Generative AI in VR. Discuss the adaptation of VR. Highlight the role of AI in crafting dynamic and interactive narratives within virtual spaces. Explores how generative model enhance visual and sensory realism in VR simulations. It contributes more to creative environments.

Keywords: Dynamic Virtual Environment, virtual splaces

ABS No.NCETAT-2024:113 ARTIFICIAL GENERAL INTELLIGENCE: AUTONOMUS SYSTEMS REACHING HUMAN-LEVEL INTELLIGENCE

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The state-of-the-art technology Artificial Intelligence has come a long way since its origination. It has an enormous impact on every industry it has been deployed. However, its cognitive, thinking, and logical ability has never been close to human-level intelligence. The aim since its invention was to reach the state of Artificial General Intelligence (AGI), the capacity to understand, learn, and execute tasks spanning diverse domains at a level that matches or exceeds human cognitive abilities. Reaching AGI is a complex puzzle, with numerous pieces of technology contributing to the picture, from Machine Learning to Neuromorphic Computing. The prime goal of AGI is to develop an algorithm that can understand input context and adapt just as humans and to go through continual learning. Integrating diverse cognitive abilities and achieving explainable, flexible decision-making remain key hurdles in theambitious race to AGI. AGI has the potential to replace the repetitive manual labour works and automatethem. Numerous companies have a goal of creating AGI namely, DeepMind, OpenAI, and Anthropic. AGI could revolutionize everything, from solving global challenges to redefining our understanding of intelligence itself.

Keywords: Artificial General Intelligence, Machine Learning, Neuromorphic Computing

ABS No. NCETAT-2024:114 A STUDY OF ENHANCING BIOMETRIC AUTHENTICATION TECHNIQUES AND THEIR APPLICATIONS IN FINGERPRINT SENSORS

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Passwords and PINs are two examples of outdated authentication techniques that offer insufficient security in an era of frequent data breaches and identity theft. This is where biometric authentication, a cutting-edge method that uses distinctive behavioural or physical characteristics to verify people identities, comes in. These days, a wide range of industries use these cutting-edge biometric technologies, including consumer electronics, banking and healthcare. Fingerprint recognition is becoming a common biometric identification technique since it is quick, easy and safe to use.In daily life, fingerprint biometrics is mostly used to establish security and trust in financial transactions,

protected area access and Smartphone unlocking. Every individual has distinct ridges and valleys that remain constant throughout their existence. As fingerprints are difficult to copy or fake, fingerprint biometrics offers a very convenient and trustworthy method of authentication. This study focuses on the advancements in biometric authentication methods of fingerprint sensors such as thermal, optical, capacitive and ultrasonic sensors. Lastly, discuss the fingerprint sensor applications, problems, highlights and execution procedure.

Keywords: authentication methods, sensor components, scanning process, applications.

ABS No. NCETAT-2024:115 LEVERAGING DEEP LEARNING FOR ENHANCED ROBOTICS: A PROJECT PROPOSAL

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In recent years, the integration of deep learning techniques with robotics has led to significant advancements in various applications, from industrial automation to autonomous vehicles. This report presents a comprehensive project proposal aimed at harnessing the power of deep learning to enhance robotics capabilities. The project aims to address the increasing demand for intelligent and adaptable robotic systems by exploring the integration of convolutional neural networks (CNNs), recurrent neural networks (RNNs), and reinforcement learning (RL) algorithms into robotics applications. The proposed project encompasses objectives related to perception and sensing, control and planning, human-robot interaction, and learning and adaptation. By leveraging simulation environments and real-world robot platforms, the project seeks to validate the effectiveness and scalability of the proposed deep learning techniques. Emphasis will be placed on open-source software frameworks and collaborativedevelopment to foster community engagement and accelerate knowledge sharing in the field of robotics and deep learning.

Keywords: Reinforcement learning, recurrent neural networks

ABS No. NCETAT-2024:116 WIRELESS TECHNOLOGY TRENDS FOR 5G

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5G– "connect anytime, anywhere, anyhow" promising everywhere network access at high speed to the end users, has been a topic of great interest mainly for the wireless telecom industry. The new upcoming technology of the fifth-generation wireless mobile network is advertised as lightning speed internet, everywhere, for everything, for everyone in the nearest future. There are a lot of efforts and research carrying on many aspects, e.g. millimetre wave (mmW) radio transmission, massive multiple input and multiple output (Massive-MIMO) new antenna technology, the promising technique of SDN architecture, Internet of Thing (IoT) and many more. In this brief survey, we highlight some of the most recent developments towards the 5G mobile network. 5G seems to be the solution for the growing user necessities of wireless broadband access and the boundaries of the existing wireless communication

system. The wireless industry is busy with the standardization of the 4ᵗʰgeneration (4G) cellular networks

Keyword:5G; millimetre Wave (mmW); Internet of Thing (IoT); SDN; massive multiple input and multiple output (Massive- MIMO)

ABS No.NCETAT-2024:117 EMPLOYEE ATTRITION PREDICTION USING MACHINE LEARNING

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Employee turnover is a problem for many organizations where valuable and experienced employees leave the organization consistently. The primary objective of this exploration work is to foster a model that predicts whether an employee will leave the organization. A tremendous measure of employee- related information is kept up which is valuable for anticipating the event of future wearing down. Toget quick results for such employee-related attrition, we proposed a model that involves Machine Learning. In this paper, we fostered a model utilizing Decision Tree, K-Nearest neighbour, Support Vector Machine, and Light Gradient Boosting Machine calculations and we calculate the accuracy of these machine learning algorithms for predicting employee attrition using the IBM dataset for training and testing. The given system enhances HRM and reduces the cost for the company. This project gives us significant knowledge that can help us predict employee attrition.

KEYWORDS: Machine Learning, Decision Tree, K-Nearest Neighbour, Support Vector Machine, And Light Gradient Boosting Machine Algorithms.

ABS No.NCETAT-2024:118 ARTIFICIAL INTELLIGENCE IN EDUCATION: ADDRESSING ETHICAL CHALLENGES IN HIGHER EDUCATION

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The study of artificial intelligence (AI) integrates machine learning, algorithm development, and natural language processing. Applications of AI change the educational resources available. AI has several uses in education, including automated assessment systems to support teachers, facial recognition software to gain insights into students' behavior, and tailored learning platforms to encourage students' learning. Even though artificial intelligence (AI) has the potential to improve teaching and learning for both students and professors, the ethical and societal consequences of these systems are rarely fully taken into account in higher education. AI in education presents some ethical issues that need to be recognized and explained to educators and students. In order to tackle these problems, this paper: (1) provides a brief definition of artificial intelligence (AI) using the concepts of machine learning and algorithms; (2) describes the ethical challenges and dilemmas associatedwith using AI in education; (3) outlines applications of AI in educational settings and highlights the benefits of AI systems to support students' learning.

Keywords: Artificial Intelligence, Machine Learning, Natural Language Processing, Automated Assessment Systems, Facial Recognition Software etc.

ABS No.NCETAT-2024:119 ADAPTIVE QUERY GENERATOR USING FACETS IN DATA MINING

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Outlier detection can usually be considered as a pre-processing step for locating, in a data set, those objects that do not conform to well-defined notions of expected behaviour. It is very important in data mining for discovering novel or rare events, anomalies, vicious actions, exceptional phenomena, etc. We are investigating outlier detection for categorical data sets. This problem is especially challengingbecause of the difficulty of defining a meaningful similarity measure for categorical data. In this paper, we propose a formal definition of outliers and an optimization model of outlier detection, via a new concept of holoentropy that takes both entropy and total correlation into consideration. Based on this model, we define a function for the outlier factor of an object which is solely determined by the object itself and can be updated efficiently. We propose two practical 1-parameter outlier detection methods, named ITB-SS and ITB-SP, which require no user-defined parameters for deciding whether an object is an outlier. Users need only provide the number of outliers they want to detect. Experimental results showthat ITB-SS and ITB-SP are more effective and efficient than mainstream methods and can be used to deal with both large and high-dimensional data sets where existing algorithms fail.

Keywords:–Outlier detection, holoentropy, outlier factor, greedy algorithms.

ABS No.NCETAT-2024:120 BLOCK CHAIN INTEGRATION IN ARTIFICIAL INTELLIGENCE FOR ENHANCED SECURITY AND TRANSPARENCY

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This study explores the symbiotic integration of blockchain technology with artificial intelligence (AI), addressing critical challenges in security and transparency. Blockchain's decentralized ledger, originally designed for cryptocurrencies, provides a tamper-resistant framework, ensuring data integrity throughout the AI lifecycle. The paper emphasizes specific applications, such as secure and transparent dataset sharing, mitigating privacy concerns in collaborative AI projects. Additionally, blockchain enhances AI accountability and interpretability, recording and auditing every decision-making step. Despite challenges in scalability and energy consumption, ongoing research aims to streamline the integration, paving the way for a transformative alliance between blockchain and AI across diverse industries.

Keywords: Blockchain, Artificial Intelligence, Symbiotic Integration, Security, Transparency, Decentralized ledger, Cryptocurrencies, Tamper- resistant Framework, Data integrity

ABS No. NCETAT-2024:121 OVERVIEW OF ONLINE LEARNING AND COLLABORATIVE LEARNING PLATFORMS

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Online learning platforms, also known as e-learning platforms, are digital environments where learners can access educational resources, courses, and materials over the internet. These platforms offer a wide range of educational content, including lectures, videos, quizzes, assignments, and interactive simulations, covering various subjects and disciplines. Online learning can take various forms, including self-paced courses, live webinars, virtual classrooms, and interactive multimedia modules.Common components of online learning platforms include learning management systems (LMS), multimedia content, discussion forums, assessment tools, and communication features. Collaborative learning platforms facilitate interactive and cooperative learning experiences among students, instructors, and peers. Collaborative learning platforms facilitate interactive and cooperative learning experiences among students, instructors, and peers. Overall, online learning and collaborative learning platforms play a crucial role in modern education, offering flexible and interactive environments for teaching, learning, and collaboration. These platforms empower students to actively engage with course materials, interact with peers, and construct knowledge collaboratively, enhancing the overall learning experience. Collaborative learning platforms play a crucial role in facilitating interactive, engaging, and inclusive online learning environments, where learners can collaborate, communicate, and co-create knowledge in virtual settings.

Keywords: LMS,Collaborative learning

ABS No. NCETAT-2024:122 MOBILE COMPUTING

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Mobile computing has become an integral part of our daily lives, with smartphones and tablets providing users with unparalleled access to information and services on the go. As the demand for mobile applications continues to surge, it becomes imperative to focus on enhancing user experience (UX) to ensure satisfaction and engagement. This paper presents a comprehensive study aimed at understanding various factors influencing UX in mobile computing. The study begins by examining the evolution of mobile computing and its impact on society, highlighting the shift towards mobile-first approaches in design and development. Subsequently, it delves into the key components of UX, including usability, accessibility, performance, and aesthetics, and their significance in the mobile context. Furthermore, the paper explores the challenges and constraints inherent in designing for mobile platforms, such as limited screen real estate, variable network conditions, and diverse user preferences. Strategies for mitigating these challenges are discussed, encompassing responsive design principles, adaptive content delivery, and progressive web applications. Additionally, the study investigates the role of emerging technologies, such as augmented reality (AR), virtual reality (VR), and artificial intelligence (AI), in redefining mobile UX paradigms. It explores how these technologies can be leveraged to create immersive and personalized experiences that resonate with users.

Keywords: Augmented Reality, User Experience

ABS No. NCETAT-2024:123 DATAANALYTICS IN FINANCE

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Data analytics plays a big role in finance and business. The level of modelling sophistication in financial services has increased considerably over the years. Nowadays, the complexity of financial problems and the vast amount of data require an engineering approach based on analytical modelling tools for planning, decision making, reporting, and supervisory control. This paper provides an overview of the main financial applications of computational and data analytics approaches, focusing on the coverage of the recent developments and trends. The overview covers different methodological tools and their uses in areas, such as portfolio management, credit analysis, banking, and insurance.

Keywords: Financial services; data analytics; risk management; financial modelling.

ABS No. NCETAT-2024:124 NATURAL LANGUAGE PROCESSING TECHNOLOGY

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Natural language processing (NLP) is a branch of artificial intelligence that deals with the interaction between computers and human languages. NLP aims to enable computers to understand, interpret, generate, and manipulate natural languages, such as English, Chinese, Hindi, etc. NLP has many applications in various domains, such as machine translation, information extraction, sentiment analysis, question answering, and more. NLP researchers and developers use different techniques and methods to analyse and generate natural language texts, such as rule-based systems, statistical methods, and machine learning algorithms, deep learning models, and hybrid approaches. NLP also relies on linguistic resources, such as corpora, lexicons, grammars, and knowledge bases, to provide information and knowledge about natural languages. NLP is an evolving and interdisciplinary field that draws from computer science, linguistics, mathematics, psychology, and cognitive science. NLP is constantly advancing with new research, innovations, and applications. Some of the current trends and challenges in NLP include Multilingual and cross-lingual NLP: developing systems that can process and generate multiple languages, or transfer knowledge and resources across languages. Low-resource and endangered languages: creating NLP tools and resources for languages that have limited data and documentation, or are at risk of extinction. Explainable and ethical NLP: ensuring that NLP systems are transparent, interpretable, fair, and accountable, and that they respect the privacy, security, and values of the users and society.

Keywords: NLP, Rule Based System, Linguistic Resources, Lexicons, Research, Innovations, Multilingual, Cross-lingual, Endangered, Transparent.

ABS No. NCETAT-2024:125 ATTENDANCE MANAGEMENT SYSTEM USING FACE RECOGNITION

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In colleges, universities, organizations, schools, and offices, taking attendance is one of the most important tasks that must be done on a daily basis. The majority of the time, it is done manually, such as by calling by name or by roll number. The main goal of this project is to create a Face Recognition-based attendance system that will turn this manual process into an automated one. This project meets the requirements for bringing modernization to the way attendance is handled, as well as the criteria for time management. This device is installed in the classroom, where and student's information, such as name, roll number, class, sec, and photographs, is trained. The images are extracted using Open CV. Before the start of the corresponding class, the student can approach the machine, which will begin taking pictures and comparing them to the qualified dataset. The face represents a unique part of the human body as well as a biometric identifier. Using facial features, wecan achieve create and use applications or systems based on facial recognition. This project involves the construction of such a system which will use facial features to mark the presence, entry time, and finally the creation of an extracted document in the Excel application. The project was developed by researching and using libraries, models as well as Machine Learning based algorithms that are necessary for face detection, training, and recognition during system operation. Python programming language is used to create the system, and CSS is used to design interfaces. The system is built in the form that professors have access to the registration of new students, as well as the creation of relevantcourses and obtaining the final attendance report after receiving notes from the system.

 Keywords: Open CV, Biometric, Machine Learning, Python

ABS No. NCETAT-2024:126 ARTIFICIAL INTELLIGENCE

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Artificial intelligence (AI) refers to what information about the language structure being transmitted to the machine: It should result in a more intuitive and faster solution, based on a learning algorithm that repeats patterns in new data. Good results are obtained in imitating the cognitive process whose several layers of densely connected biological subsystems are invariant to many input transformations. This invariant so sought after by AI and cognitive computing is in the universal structure of language, provider of the universal language algorithm. The representation property to improve machine learning (ML) generalizes the execution of a set of underlying variation factors thatmust be described in the form of other simpler underlying variation factors, preventing the "curse of dimensionality." The universal model specifies a generalized function (representational capacity of the model) in the universal algorithm, serving as a framework for the algorithm to be applied in a specific circumstance
Keywords: SQL, database, AI, machine learning

ABS No. NCETAT-2024:127 INTERNET OF THINGS

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The rapid development and implementation of smart and IoT (Internet of Things) based technologies have allowed for various possibilities in technological advancements for different aspects of life. The main goal of IoT technologies is to simplify processes in different fields, to ensure a better efficiency of systems (technologies or specific processes) and finally to improve life quality. Sustainability has become a key issue for population where the dynamic development of IoT technologies is bringing different useful benefits, but this fast development must be carefully monitored and evaluated from an environmental point of view to limit the presence of harmful impacts and ensure the smart utilization of limited global resources. Significant research efforts are needed in the previous sense to carefully investigate the pros and cons of IoT technologies. This review editorial is partially directed on the research contributions presented at the 4ᵗʰ International Conference on Smart and Sustainable Technologies held in Split and Bol, Croatia, in 2019 (SpliTech 2019) as well as on recent findings from literature. The focus of the conference was directed towards key conference tracks such as Smart City, e-Health and Engineering Modelling. The research presented and discussed at the SpliTech2019 conference helped to understand the complex and intertwined effects of IoT technologies on societies and their potential effects on sustainability in general. Various application areas of IoT technologies were discussed as well as the progress made. Four main topical areas were discussed in the herein editorial, i.e. latest advancements in the further fields: (i) IoT technologies in Sustainable Energy and Environment, (ii) IoT enabled Smart City, (iii) E-health – Ambient assisted living systems (iv)IoT technologies in Transportation and Low Carbon Products.
Keywords: IoT, Smart city, Sustainability, Energy, Environment, SpliTech2020

ABS No.NCETAT-2024:128 AI- ARTIFICAL INTELLIGENCE

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Artificial intelligence (AI) has emerged as a transformative force across various sectors,revolutionizing industries and reshaping societal norms. This abstract explores the fundamental principles, advancements, and applications of AI, highlighting its capabilities in data analysis, patternrecognition, and decision-making. Through machine learning algorithms, neural networks, and natural language processing techniques, AI systems exhibit remarkable adaptability and intelligence, enabling automation, optimization, and innovation. However, challenges such as ethical considerations, algorithmic biases, and the need for responsible AI governance persist. By fostering interdisciplinary collaboration, ethical frameworks, and continuous research, AI holds the promise of enhancing human productivity, augmenting decision-making processes, and addressing complexglobal challenges in healthcare, finance, transportation, and beyond. This abstract underscore the imperative for ethical AI development and deployment to ensure a future where artificial intelligence augments human capabilities while upholding ethical standards and societal values. Artificial intelligence (AI) continues to reshape industries and societal norms through its capabilities in data analysis, pattern recognition, and decision-making. This abstract explores AI's transformative potential, highlighting its role in automation, optimization, and innovation across various sectors.

However, ethical considerations, algorithmic biases, and the need for responsible AI governance remain challenges. Emphasizing interdisciplinary collaboration and ethical frameworks, this abstract underscore the importance of fostering AI development that augments human capabilities while upholding ethical standards.

Keywords: Artificial Intelligence, Advancements, Data Analysis, Pattern Recognition, Automation

ABS No. NCETAT-2024:129 ROBOTIC PROCESS AUTOMATION

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Robotic Process Automation (RPA) is a disruptive technology that automates repetitive, rule-based tasks within enterprises, freeing up human resources to focus on higher-value activities. By leveraging software robots or "bots" to mimic human interactions with digital systems, RPA streamlines business processes, reduces operational costs, and enhances efficiency. This abstract explores the transformative impact of RPA on organizations across various industries, highlighting its ability to increase productivity, accuracy, and scalability. With its potential to revolutionize workflows and optimize resource utilization, RPA stands as a cornerstone of digital transformation inthe modern business landscape. Robotic Process Automation (RPA) represents a paradigm shift in how businesses approach process optimization and automation. RPA technology involves the implementation of software robots or bots to perform repetitive, rule-based tasks traditionally carried out by humans. These bots interact with applications, manipulate data, trigger responses, and communicate with other systems to streamline workflows and automate business processes. This paper delves into the transformative impact of RPA across industries, showcasing its ability to drive operational efficiencies, reduce errors, and enhance scalability. Through the lens of RPA, organizations can achieve significant cost savings, improved accuracy, and increased productivity by eliminating manual interventions and accelerating process execution. The integration of RPA in business operations empowers employees to focus on strategic, creative, and value-added tasks, fostering a culture of innovation and growth. Furthermore, RPA enables businesses to adapt to dynamic market demands, regulatory changes, and technological advancements with greater agility and speed. The adoption of RPA transcends traditional boundaries, revolutionizing how enterprises approach digital transformation and operational excellence. By harnessing the power of automation, organizations can achieve enhanced process efficiency, higher quality outputs, and enhanced customer satisfaction. This paper explores the practical applications, benefits, challenges, and future prospects of RPA as a cornerstone of modern business strategy, ushering in a new era of operational efficiency and competitive advantage.

Keywords: Automation, Software Robots, Business Process Automation, Task Automation

ABS No. NCETAT-2024:130 DATAANALYTICS USING BIG DATA TOOLS

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The age of big data is now coming. But the traditional data analytics may not be able to handle such large quantities of data. The question that arises now is, how to develop a high- performance platform to efficiently analyze big data and how to design an appropriate mining

algorithm to find the useful things from big data. Data analytics has emerged as a crucial discipline in extracting insights, making informed decisions, and driving innovation across various domains. This paper provides a comprehensive overview of data analytics, covering its fundamental concepts, methodologies, and applications. We delve into the various techniques used in data collection, processing, analysis, and visualization, including descriptive, diagnostic, predictive, and prescriptive analytics. Furthermore, we explore the diverse applications of data analytics in business, healthcare, finance, marketing, and beyond, showcasing its transformative impact on decision-making processes and organizational performance. Additionally, we discuss the challenges associated with data analytics, such as data quality, privacy concerns, scalability, and interpretability, and propose strategies to address them. By understanding the principles and applications of data analytics, organizations can harness the power of data to gain a competitive advantage and drive innovation in today's data-driven world.

Keywords: Big data, data analytics, business, healthcare, finance, marketing, social networks, data mining, visualization, decision making

ABS No. NCETAT-2024:131 PEER- TO-PEER NETWORK

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Created when two or more PCs are connected and share resources together without going through a separate server computer. The P2P network allows a couple of computers to communicate and connect via a Universal Serial Bus to transfer data. The P2P network creates a severe impact on a company's communication process, and it is the most accessible type of architecture to build. On a magnificent scale, the P2P network helps set up direct relationships among users with specific protocols and applications added to the network. The peer-to-peer network was first developed in the late 1970s. A computer acts as a node for file sharing within the network, and every node acts as a server. Thus, there is no central server to the network. Every node has an equal share of the workload.

Keywords: Large networks, fault-tolerant, search efficiency p2p network, bloom filter, routing table, the frequency inverse document.

ABS No. NCETAT-2024:132 POWERFUL VIRTUALAGENTS

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Nowadays, customers expect to get support outside store hours, even 24/7, when live agents would be cost prohibitive. Therefore, companies deploy chatbots to provide a first-line response to the most popular inquiries submitted through various information channels. Powerful chatbots can initiate a dialogue with a human over the internet or by another channel, such as text messaging. They can also download information from various systems and present it to the user clearly and coherently. Power Virtual Agents (PVA) is one of Microsoft's Power Apps, a collection of low-code platform modules. It roceses to easily create intelligent chatbots for both external users (company clients) and internal users (company employees). Microsoft's technology makes it possible to build conversation flows with an rocestive graphical interface instead of advanced code. Power Virtual Agents has built-in AI language processing mechanisms, which it uses to create the most natural and human-like

conversation possible. The chatbots are available for use in many channels, not just within the Microsoft ecosystem on your website/online store without the help of any advanced developers. Naturally, PVA is perfectly integrated with Power Automate services, so users can create advanced custom workflows and retrieve information from external sources and other systems using pre built connectors.

Keywords: Virtual agents, PVA, Chat bots, Microsoft.

ABS No. NCETAT-2024:133 EXPERT SYSTEM FOR CONSTRUCTION PROJECT MONITORING

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Potential applications of knowledge based expert systems in the area of construction project monitoring and control are described. Originally developed from research in artificial intelligence, these systems are computer programs that can undertake intelligent tasks currently performed by highly skilled People. While some project monitoring can be accomplished by algorithmic Procedures, the capability of knowledge based expert systems to deal with ill structured problems andto be extensively modified over time make them desirable for application in this area. Sample applications and heuristic rules in Scheduling and inventory control are provided.

Keywords: Cost and time control, Purchasing and inventory control, Expert system, artificial intelligence.

ABS No. NCETAT-2024:134 DECISION MANAGEMENT PROCESS IMPROVEMENT PROJECT

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It has become all too common that questions are raised during the execution of a project pertaining to the decisions that were made early on. Without having maintained a concise, accessible record of project decisions, the project manager and team members would find it difficult to provide hard evidence as to how they got to this point and what impacts specific decisions had on the project's trajectory. This paper introduces the Decision Management Process Improvement Project (DMPIP), which focuses on improving decision management process throughout the lifecycle of a project with the aim of adding value to project performance and helping obtain project success. This new tool was inspired due to a lack of appropriate methods involving complex projects at a local consulting firm. The rocesss along with the tool is being added to the toolset of a local Consulting Firm. This Firm plans to introduce the tools and techniques to clients that will benefit from an increased Project Management maturity level with improvements to its decision-tracking processes and demonstration of downstream effects of important decisions. The final product is a contribution to the Project Management Body of Knowledge (PMBOK) in the form of creating a Project Decision Management knowledge area in the PMBOK format. A decision log that follows a decision throughout the whole

process from problem identification and analysis to the eventual outcome is at the core of the created knowledge area.

Keywords: Capturing Decisions in Project Management, Decision Management, Decision Tracking, Decision Management Tools and Techniques, Decision Log.

ABS No. NCETAT-2024:135 MACHINE LEARNING PROJECT

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In this project, we were asked to experiment with a real world dataset, and to explore how Machine learning algorithms can be used to find the patterns in data. We were expected to gain Experience using a common data-mining and machine learning library, Weka, and were expected to submit a report about the dataset and the algorithms used. After performing the required tasks on a dataset of my choice, herein lies my final report.

Keywords: Machine Learning, Pattern Recognition, Classification, Supervised learning, Artificial Intelligence.

ABS No. NCETAT-2024:136 NATURAL LANGUAGE PROCESSING

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Natural language processing is a branch of computer science and artificial intelligence which is concerned with interaction between computers and human languages. Natural language processing is the study of mathematical and computational modelling of various aspects of language and the development of a wide range of systems. These includes the spoken language systems that integrate speech and natural language. Natural language processing has a role in computer science because many aspects of the field deal with linguistic features of computation. Natural language processing is an area of research and application that explores how computers can be used to understand and manipulates natural language text or speech to do useful things. The applications of Natural language processing include fields of study, such as machine translation, natural language text processing and summarization, user interfaces, multilingual and cross language information retrieval (CLIR), speech recognition, artificial intelligence (AI) and expert systems.

Keywords: Natural language Processing (NLP), machine translation, Cross Language

ABS No.NCETAT-2024:137 DEEP LEARNING PROCESSING

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The age of big data is now coming. But the traditional data analytics may not be able to handle such large quantities of data. The question that arises now is, how to develop a high-

performance platform to efficiently analyze big data and how to design an appropriate mining algorithm to find the useful things from big data. Data analytics has emerged as a crucial discipline in extracting insights, making informed decisions, and driving innovation across various domains. This paper provides a comprehensive overview of data analytics, covering its fundamental concepts, methodologies, and applications. We delve into the various techniques used in data collection, processing, analysis, and visualization, including descriptive, diagnostic, predictive, and prescriptive analytics. Furthermore, we explore the diverse applications of data analytics in business, healthcare, finance, marketing, and beyond, showcasing its transformative impact on decision-making processes and organizational performance. Additionally, we discuss the challenges associated with data analytics, such as data quality, privacy concerns, scalability, and interpretability, and propose strategies to address them. By understanding the principles and applications of data analytics, organizations can harness the power of data to gain a competitive advantage and drive innovation in today's data-driven world.

Keywords: Big data, data analytics, business, healthcare, finance, marketing, social networks, data mining, visualization, decision making

ABS No. NCETAT-2024:138 DATAANALYTICS

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The data available is growing at an exponential rate. The increase in data in itself is a minor problem, but the percentage of unstructured data in the overall data volume is what is concerning all. So it becomes a basic necessity to discover ways to process and transform complex, unstructured, or large amounts of data—into meaningful insights, This brief outline of data analysis will help us understand what is data analysis, the value it holds in many industries worldwide and how majority of the organizations in various sectors bank on data analysis to survive the ongoing market race. This paper maintains its focus on explaining the basic procedures followed in obtaining something immensely useful from the available disorganized facts and figures by analyzing them. Also discussed briefly are its applications in areas such as management, retail, healthcare, education and so on. This paper highlights important concepts of data analysis.

Keywords: Anomalies,data analysis, decision-making, productivity enhancement, unstructured data

ABS No. NCETAT-2024:139 ARTIFICIAL INTELLIGENCE

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This project explores the applications and advancements of artificial intelligence (AI) in various domains, including healthcare, finance, transportation, and entertainment. Through a comprehensive review of literature and case studies, the project examines how AI technologies such as machine learning, natural language processing, and computer vision are revolutionizing industries, enhancing efficiency, and driving innovation. Additionally, it delves into the ethical implications and societal impacts of AI adoption, addressing concerns related to privacy, bias, and job displacement. The findings highlight the transformative potential of AI while emphasizing the need for responsible development and deployment to ensure its benefits are maximized while mitigating potential risks.

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Keywords: Artificial Intelligence, AI, Machine Learning, Deep Learning, Entertainment, Ethics, Privacy, Bias, Job Displacement, Innovation, Society, Responsible AI.

ABS No. NCETAT-2024:140 IOT FLOOD MONITORING & ALERTING SYSTEM

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Flooding is usually brought on by an increased quantity of water in a water system, like a lake, river overflowing. On occasion a dam fractures, abruptly releasing a massive quantity of water. The outcome is that a number of the water travels into soil, and flooding the region. Rivers are involving river banks, in a station. Aside from lack of products and house and office property, streets infrastructure flood water consists of bacteria and sewage flow of waste sites and chemical spillage which leads to a variety of diseases afterwards. The speed of change in river stage on a real time basis, which may help indicate the seriousness and immediacy of this threat. Understanding of the form of storm generating the moisture, such as length, intensity and areal extent, which is valuablefor discovering potential seriousness of the flood. In this system we make use of a raspberry pi with water sensors, rain sensors to predict flood and alert respective authorities and sound instant alarm in nearby villages to instantly transmit information about possible floods using IOT. The water sensors are used to measure water level of 3 different locations. Also 3 different rain sensors are used to measure rain level of those 3 areas. These sensors provide information over the IOT using Raspberry Pi. On detection of conditions of flooding the system predicts the amount of time it would take to flood in a particular area and alerts the villages/areas that could be affected by it. The system also calculates the time it would take for flood to reach them and provides a time to people so that theycan evacuate accordingly.

Keywords: IOT, flood , raspberry pi , sensor , water , soil , areas , Villages , time , affected , alarm

ABS No.NCETAT-2024:141 NAVIGATING THE WORLD OF ARTIFICIAL INTELLIGENCE FROM ORIGINS TO IMPACTS

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Artificial Intelligence (AI) is a remarkable product of human creativity, profoundly shaping industries, societies, and our daily lives. This abstract serves as a comprehensive exploration of AI, breaking down its fundamental principles, historical journey, and potential impact. Starting with a historical overview, we journey through AI's roots, highlighting major milestones and advancements from its inception to the present day. We witness the shift from early symbolic logic systems to today's cutting-edge deep learning algorithms, which have revolutionized problem-solving and cognitive abilities. One of AI's greatest strengths lies in its ability to blend insights from diverse fields like computer science, neuroscience, and mathematics, sparking innovative breakthroughs. We delve into AI's core components—machine learning, natural language processing, computer vision, and robotics—revealing their intricate workings and practical applications in the real world. Beyond its technical aspects, AI prompts important discussions about ethics, society, and economics. Topics such as accountability, bias mitigation, and workforce adaptation take centre stage as we grapple withthe ethical and societal implications of AI's widespread adoption. Moving forward, strategic planning

and ethical considerations are essential to ensuring AI's responsible and inclusive use as it continues to push the boundaries of human achievement.

Keywords: Artificial Intelligence (AI), Historical overview, Deep learning algorithms, Machine learning Natural language processing, Computer vision, Robotics, Ethics, Society, Economics, Accountability, Bias mitigation, Responsible use, Workforce adaptation, Inclusive use.

ABS No.NCETAT-2024:142 EDGE COMPUTING

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Edge computing has emerged as a paradigm to address the limitations of traditional cloud-centric approaches by bringing computation and data storage closer to the location where it is needed, thereby reducing latency, bandwidth usage, and reliance on centralized data centres. This thesis explores various aspects of edge computing, including its architecture, challenges, applications, and potential benefits. Through a comprehensive review of existing literature and case studies, it highlights the importance of edge computing in enabling real-time processing, low-latency applications, and improved scalability for emerging technologies such as Internet of Things (IoT), autonomous vehicles, and augmented reality. Additionally, this thesis investigates the impact of edge computing on network infrastructure, security, privacy, and energy efficiency, providing insights into the trade-offs and considerations involved in deploying edge computing solutions. Overall, this research contributes to a deeper understanding of edge computing and its implications for future distributed computing paradigms.

Keywords: Edge computing, cloud computing, architecture, challenges, applications, benefits, real-time processing, low-latency, Internet of Things (IoT), autonomous vehicles, augmented reality, network infrastructure, security, privacy, energy efficiency, distributed computing, paradigm.

ABS No.NCETAT-2024:143 ARTIFICIAL SUPER INTELLIGENCE (ASI)

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Artificial Intelligence is the science of making machines that can think like humans. So, AI is the backbone of smart assistants. Artificial Super Intelligence (ASI) is a software-based system with intellectual powers beyond those of humans across a comprehensive range of categories and fields of endeavour. ASI is also known as 'Super AI'. It was different from regular AI, which involves as learning simulation of human intellectual capabilities, such as learning through the acquisition of information, reasoning and self-correction. With ASI, machines can think of the possible interpretations which are simply impossible for humans to think. This is because the human brain has a limit to the thinking ability which is constrained to some billion neurons. It can also automate complex processes and improved accuracy and decision-making. AI is increasingly a part of our everyday lives in systems. Nevertheless, AI technology is in its early days of development. The intention behind ASI is to surpass human cognitive capacity, which isheld back by chemical and biological limits of the human brain. Theoretically, ASI's superior capabilities would apply across many disciplines and industries and include cognition, general intelligence, problem-solving abilities, social skills and creativity. Advancements in AI for applications like Natural Language Processing (NLP) and Computer Vision (CV) are helping

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industries like financial services, healthcare, and automotive accelerate innovation, improve customer experience, and reduce costs. The goal for Super AI is to be able to do things such as recognize patterns, make decisions, and judge like humans.

Keywords: Artificial Intelligence (AI), Artificial Super Intelligence (ASI), Overview, Super AI , NLP and CV, New invention on many sectors, Goal of Super AI.

ABS No.NCETAT-2024:144 A BI-STAGE IG – PCA DIMENSIONALITY REDUCTION APPROACH FOR THE DIAGNOSIS OF PANDEMIC DISEASES FROM CLINICAL ATTRIBUTES

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Diagnosis of pandemic diseases is a challenging task due to high dimensional clinical data sets. Feature selection plays a vital role in extracting the features relevant to the diagnosis. To reduce the computational complexity and to enhance the accuracy of prediction results, a bi-stage IG-PCA based feature extraction technique was proposed in this research work. The Input COVID-19 patient records each containing 20 features is initially pre-processed by applying data cleaning, transformation and normalization operations. For feature selection, in stage I, the information gain value of each input feature is computed, ranked and only the features whose gain value greater than the threshold value alone are selected. In stage II, principal component analysis is applied to extract the optimal features. Among the 20 input features, 8 features were selected in stage I and an optimal feature set with 7 features was extracted in stage II. This feature set was further used to train the supervised Naïve Bayes machine learning classifier, the results were analysed and evaluated with various classification metrics and found that the proposed method outperformed with the prediction accuracy of 98.9%.

Keywords: COVID-19, Feature Selection, Information Gain, principal component analysis, Naïve Bayes classifier

ABS No.NCETAT-2024:145 CLOUD COMPUTING

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"Cloud" is a collective term for a large number of developments and possibilities. It is not an invention, but more of a "practical innovation", combining several earlier inventions into something new and compelling. Much like the iPod is comprised of several existing concepts and technologies (the Walkman, MP3 compression and a portable hard disk), cloud computing merges several already available technologies: high bandwidth networks, virtualization, Web 2.0 interactivity, time sharing, and browser interfaces. Cloud Computing is a popular phrase that is shorthand for applications that were developed to be rich Internet applications that run on the Internet (or "Cloud"). Cloud computing enables tasks to be assigned to a combination of software and services over a network. This network of servers is the cloud. Cloud computing can help businesses transform their existing

server infrastructures into dynamic environments, expanding and reducing server capacity depending on their requirements. A cloud computing platform dynamically provisions, configures, reconfigures, and deprovisions servers as needed. Servers in the cloud can be physical machines or virtual machines. Advanced clouds typically include other computing resources such as storage area networks (SANs), network equipment, firewall and other security devices.The growth in the quantity and diversity of data has led to data sets larger than is manageable by the conventional, hands-on management tools The accessibility to large datasets enables the application of complex algorithms and data science (DS) tools. In this sense, DS tools, such as machine learning (ML), have the potential to support several fields of research, such as biomedicine, neuro- science or robotics, by the automation or resolution of complex tasks in time series prediction, classification, regression, diagnostics, monitoring, and so on.

Keywords: Machine Learning, Data Science

ABS No.NCETAT-2024:146 A SHORT DISCUSSION ON "CLOUD COMPUTING"

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Cloud computing is a new and innovative technique for the era of internet and technology . Cloud computing is a systematic and technical way to share resources ,services , platform and even the infrastructure to the clients . Cloud computing is being projected by several major IT companiessuch as IBM , Google , Yahoo , Amazon and others as fifth utility where clients will have access for processing those applications and or software project which need very high speed for compute intensive and huge data capacity for scientific , engineering research problems and also e-business and data content network applications. These services for different typesof clients will be provided under DASM Direct Access Service Management based on virtualization of hardware , software and very high bandwidth internet communication . Clients can buy the services as per their needs and requirement without getting the direct access of hardware
. Mostly root level management is controlled by the vendors .

keywords : Cloud Computing , Data , Virtualization , Security , Risk , Encryption Decryption , Services , Organization .

ABS No.NCETAT-2024:147 LOCAL SERVICE SEARCH ENGINE MANAGEMENT SYSTEM

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LSSEMS is a web-based application which helps user to find serviceman in a local area such as maid, tuition teacher, plumber etc. LSSEMS contain data of serviceman (maid, tuition teacher, plumber etc.). The main purpose of LSSEMS is to systematically record, store and update the serviceman records. This application manages all critical minor concern. It can help user to get the serviceman of locality at doorstep. It is an web application which serving as a platform for users and service providers to interact each other about delivering the desired service. In this project there are two modules i.e. admin and user. This system store the details and information of the on-call workers or Freelancers and Companies so when the people or company needed service for any type of services they needs can simply search from the website that is available or can give service in their area. The system is a simple project that provides people or other company needs a service or to do

work for them temporarily, this system can also help freelancers or small business to market their skills by making their information more attractive to the persons or companies who are looking a temporary worker with a certain skill. The system has 2 sides of User Interface which are the Administrator Side and the User Side. The Administrator Side is the side of the system that manages the data or information for the website and the User Side is the system side that serves as the website which displays all the data of the system for the website visitors.

Keywords: Web application, algorithm

ABS No.NCETAT-2024:148 CONCERNS FOR DEVELOPMENT OF CLOUD COMPUTING

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Cloud computing has come of age since amazon's rollout of the first of cloud services in 2006. It is particularly relevant to Hong kong because of the tremendous amounts of data that are beingprocessed here daily in various sectors, and there are signs that subscription to cloud services by the local companies will soon be on a skyrocket course, despite a slow start in previous years. As a research theme, cloud computing now easily tops any list of topics in computer science because of its Far Reaching implications in many areas in computing, especially big data which without cloud computing is at best a concept. "cloud" is a collective term for a large number of developments and possibilities. It is not an invention, but more of a "practical innovation", combining several earlier inventions into something new and compelling. Cloud computing is the on-demand availability of computer system resources, especially data storage and computing power, without direct activemanagement by the user. Large clouds often have functions distributed over multiple locations, each of which is a data center. This brief talk will outline some of the concerns pertaining to the further development of cloud computing into a mature technology that meets its original goals.

Keywords: On-demand, Storage, Multiple location, Virtualization, Data Center

ABS No.NCETAT-2024:149 ROBOTIC PROCESS AUTOMATION(RPA)

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Robotic Process Automation (RPA) revolutionizes business operations by employing software robots to automate repetitive tasks, enhance efficiency, and minimize errors. RPA enables organizations to streamline workflows, reduce operational costs, and allocate human resources to more strategic initiatives. The implementation of RPA not only accelerates processes but also ensures compliance with regulations. It involves into the key components of RPA, emphasizing its adaptability to various business processes. As organizations embrace digital transformation, RPA emerges as a pivotal tool in driving productivity and maintaining a competitive edge in the rapidly evolving landscape. It explores the integration of Artificial Intelligence (AI) in Robotic Process Automation (RPA) to enhance efficiency and decision-making capabilities. RPA in Artificial Intelligence involves using software robots or "bots" to automate repetitive and rule-based tasks within business processes. In

digital workforce, RPA enables efficient and accurate execution of tasks, improving productivity and reducing errors.

Keywords: Automation, Bots. Artificial Intelligence, Robotics, Digital work

ABS No.NCETAT-2024:150 A FULLY HOMOMORPHIC ENCRYPTION SCHEME FOR BLOCK CHAIN TECHNOLOGY WITH PRIVACY AND SECURITY

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Internet based technologies are evolving rapidly and security, privacy are its paramount issues.Block chain is one such technology to store, process and transfer data in a distributed and decentralized way and it plays a major role in crypto currency based systems. The immutable data of block chain are not immune to cyber attacks and fraud. The data must be operable without loss of security and privacy. Fully Homomorphic Encryption (FHE) scheme can promise to address the privacy issues concerned with block chain. This paper addresses a new FHE scheme based on symmetric key to protect the block chain data as FHE schemes can provide end-to-end data encryption for remote computing. The FHE scheme discussed in this paper is simple as it is based on matrices and it provides an excellent security over the block chain data.
Keywords: FHE, Crypo currency.

ABS No.NCETAT-2024:151 SMART CARD BASED PATIENT HEALTH MONITORING SYSTEM

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Smart cards are used in information technologies as portable integrated devices with data storage and data processing capabilities. As in other fields, smart card use in health monitoring systems became popular due to their increased capacity and performance. Their efficient use with easy and fast data access facilities leads to implementation particularly widespread in security systems. In this project, a smart card based patient health monitoring system is developed. The system uses smart card for personal identification and transfer of health data and provides data communication via a distributed protocol which is particularly developed for this study. Two smart card software modules are implemented that run on patient and healthcare professional smart cards, respectively. In addition to personal information, general health information about the patient is also loaded to patient smart card. Health care providers use their own smart cards to be authenticated on the system and to access

data on patient cards. Encryption keys and digital signature keys stored on smart cards of the system are used for secure and authenticated data communication between clients and database servers over distributed object protocol.

Keywords: portable, devices, capacity, health, identification and transfer, patient smart card

ABS No.NCETAT-2024:152 IMPROVED PRIVACY PRESERVING CONTENT BASED RETRIEVAL IN CLOUD REPOSITORIES

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By leveraging virtual machine (VM) technology which provides performance and fault isolation, cloud resources can be provisioned on demand in a fine grained, multiplexed manner rather than in monolithic pieces. By integrating volunteer computing into cloud architectures, this envision a gigantic self-organizing cloud (SOC) being formed to reap the huge potential of untapped commodity computing power over the Internet. Toward this new architecture where each participant may autonomously act as both resource consumer and provider, this proposes a fully distributed, VM-multiplexing resource allocation scheme to manage decentralized resources. This approach not only achieves maximized resource utilization using the proportional share model (PSM), but also delivers provably and adaptively optimal execution efficiency.This design a novel multi-attribute range query protocol for locating qualified nodes. Contrary to existing solutions which often generate bulky messages per request, our protocol produces only one lightweight query message per task on the Content Addressable Network (CAN). It works effectively to find for each task its qualified resources under a randomized policy that mitigates the contention among requesters. It shows the SOC with our optimized algorithms can make an improvement by 15-60 percent in system throughput than a P2P Grid model. Our solution also exhibits fairly high adaptability in a dynamic node-churning environment.

keywords: virtual machine, self-organizing cloud, proportional share model, Content Addressable Network

ABS No.NCETAT-2024:153 ADVANCED CACHE MANAGEMENT WILDCARD RULE FOR SOFTWARE DEFINE NETWORKS

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Software-Defined Networking enables flexible flow control by caching rules at Open Flow switches. Wildcard rule caching enables management of traffic aggregates, reduces flow setup queries, and simplifies policy management. However, to guarantee correct packet matching, some rules that depend on the requested rule need to be cached as well, which leads to unnecessary flow table bloat and potential overflow. We have proposed a scheme called Caching rules in Buckets (CAB) to mitigate the dependency issue by partitioning the field space into buckets and caching rules

associated with the requested buckets. In this project, we propose the Adaptive Cache Management (ACME) for CAB, which dynamically adjusts the sizes and shapes of buckets according to incoming traffic to achieve more efficient flow table utilization. The improvement also includes preloading rules that span a wide field space to reduce bandwidth usage in the control channel. We formalize the caching policies for CAB-ACME to guarantee the semantic correctness of packet classification. We evaluate the performance of CAB-ACME through software-based simulations and a prototype built with the Open Daylight controller and hardware switches from multiple vendors. The results show that, compared with other rule caching schemes, CAB-ACME reduces the cache miss rate by one order of magnitude and the control channel bandwidth usage by a half. ACME also helps maintain a steadier performance under dynamic traffic changes compared with the baseline CAB design.

Keywords: Flow control, Adaptive Cache Management, ACME, bandwidth, prototype

ABS No.NCETAT-2024:154 A NOVEL APPROACH TO PREDICT BLOOD GROUP IDENTIFICATION SYSTEM

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The traditional methods of blood group identification rely on time-consuming and manual laboratory techniques. In this project, we propose a novel approach that leverages machine learning algorithms to predict blood groups swiftly and accurately. Our system aims to enhance the efficiency of blood group identification, especially in emergency situations where rapid and precise information iscrucial for medical interventions. The most reliable and unique feature of human identity is the blood group prediction. The prediction cannot be changed and remains as is till death of an individual. Till date in the cases of events considerations blood group is considered as most important evidence even in court of law. The minutiae pattern of each human is different and the chance of having similarity isvery less almost one in sixty-four thousand million. The minutiae pattern is different even for twins. The ridge pattern is also unique and remains unchanged from birth of individual. The method givenin this paper consist of matching of minutiae feature pattern extracted from blood for person identification system. The problem of blood group is also investigated with this project. The blood prediction is processed with the estimation of ridge frequency.

Keywords: Blood group, Predict Blood, Machine Learning, Minutiae Pattern

ABS No.NCETAT-2024:155 REGULATING DOCUMENT STREAMS ON TOP-K USING MONITORING SYSTEM

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The efficient processing of document streams plays an important role in many information filtering systems. Emerging applications, such as news update filtering and social network notifications, demand presenting end-users with the most relevant content to their preferences. In this work, user preferences are indicated by a set of keywords. A central server monitors the document stream and continuously reports to each user the top-k documents that are most relevant to her keywords. Our objective is to support large numbers of users and high stream rates, while refreshing the top-k results

almost instantaneously. Our solution abandons the traditional frequency-ordered indexing approach. Instead, it follows an identifier-ordering paradigm that suits better the nature of the problem. When complemented with a novel, locally adaptive technique, our method offers (i) proven optimality w.r.t. the number of considered queries per stream event, and (ii) an order of magnitude shorter response time (i.e., time to refresh the query results) than the current state-of-the-art.

Keywords: Top-k query, Continuous query, Document stream, filtering.

ABS No.NCETAT-2024:156 SMART GRID ELECTRICITY PRICE FOR CASTING IN BIG DATA ANALYTICS

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Electricity price forecasting is a significant part of smart grid because it makes smart grid cost efficient. Nevertheless, existing methods for price forecasting may be difficult to handle with huge price data in the grid, since the redundancy from feature selection cannot be averted and an integratedinfrastructure is also lacked for coordinating the procedures in electricity price forecasting. To solve such a problem, a novel electricity price forecasting model is developed. Specifically, three modules are integrated in the proposed model. First, by merging of Random Forest (RF) and Relief-F algorithm, we propose a hybrid feature selector based on Grey Correlation Analysis (GCA) toeliminate the feature redundancy. Second, an integration of Kernel function and Principle ComponentAnalysis (KPCA) is used in feature extraction process to realize the dimensionality reduction. Finally, to forecast price classification, we put forward a differential evolution (DE) based Support Vector Machine (SVM) classifier. Our proposed electricity price forecasting model is realized via these three parts. Numerical results show that our proposal has superior performance than other methods.

Keywords: Random Forest, Kernel function and Principle Component Analysis, differential evolution, redundancy

ABS No.NCETAT-2024:157 SENTIMENT ANALYSIS OF FOOD REVIEW USING NEURAL NETWORKS

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The combination of machine learning approach and natural language processing is applied to analyse the sentiment of text for particular sentences. In this particular area lots of work done in recent times. Restaurant business was always a popular business in Bangladesh. These business is now Leaning towards online delivery services and the overall quality of restaurants are now judged by reviews of customers. One try to understand the quality of a restaurant by the reviews from other customers. These opinions of customers organizing in structured way and to understand perception of customers reviews and reactions is the main motto of our work. Collecting data was the first thing we have donefor deploying this piece of work. Then making a dataset which we harvested from websites and tried to deploy with deep learning technique. In this piece of research, a combined CNN-LSTM architecture used in our dataset and got an accuracy of 94.22%. Also used some other performance metrics to evaluate our model.

Keywords: Machine Learning, Services, Food, Customers reviews, CNN-LSTM architecture

ABS No.NCETAT-2024:158 INTERNET OF THINGS

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We're entering a new era of computing technology that many are calling theInternet of Things (IoT). Machine to machine, machine to infrastructure, machine to environment,Internet of Everything, the Internet of Intelligent Things, intelligent systems—call it what you want, but it's happening, and its potential is huge.We see the IoT as billions of smart, connected "things" (asort of "universal global neural network" in the cloud) that will encompass every aspect of our lives, and its foundation is the intelligence that embedded processing provides. The IoT is comprised of smart machines interacting and communicating with other machines,objects, environments and infrastructures. As a result, huge volumes of data are being generated, and that data is being processed into useful actions that can command and control" things to make our lives much easier and safer—and to reduce our impact on the environment. The creativity of this new era is boundless, with amazing potential to improve our lives. The following thesis is an extensive reference to the possibilities, utility, applications and the evolution of the Internet of Things.

Keywords: Sensors, Ashton,Connectivity,Intelligence

ABS No.NCETAT-2024:159 BIOMETRICS

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The term Biometrics is derived from the greek word Bio means "Life" and Metrics means "to measure.The term biometrics is invented by "Alphonse bertillon" in late 19th century. Biometrics is widely used in identification systems to improve the security.The leading modelity is fingerprint thanks to its wide users acceptability, accuracy,security, as well as its relatively inexpensive cost.Biometrics Technology is a secure and convenient identification method and it does not need to remember complex password,nor smart cards,keys.Biometrics is measurable characteristics of individuals based on their behavioural patterns or physiological features that can be used to verify or recognize their identity.Physical characteristics include fingerprints, palm or handgeometry,Iris,retinas and facial characteristics,behavioral characteristics include signature, keystroke and voice patterns with combination of biometic technology products and modern computer technology,it is easy to perform monitoring,management,system integration,automated management and security application.It is analysed that people have meet on biometrics systems and in future they are agreed to face changing in the current systems.

Keywords-Biometrics-Behavioural patterns,physiological features-ATMs-passport control

ABS No.NCETAT-2024:160 DEEP LEARNING

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Deep learning is an emerging area of machine learning (ML) research. It comprises multiple hidden layers of artificial neural networks. The deep learning methodology applies nonlinear transformations and model abstractions of high level in large databases. The recent advancements in deep learning architectures within numerous fields have already provided significant contributions in artificial intelligence. This article presents a state of the art survey on the contributions and the novel applications of deep learning. The following review chronologically presents how and in what major

applications deep learning algorithms have been utilized. Furthermore, the superior and beneficial of the deep learning methodology and its hierarchy in layers and nonlinear operations are presented and compared with the more conventional algorithms in the common applications. The state of the art survey further provides a general overview on the novel concept and the ever-increasing advantages and popularity of deep learning.

Keywords: Data science, MLP, Autoencoders, CNN, RNN.

ABS No.NCETAT-2024:161 ROBOTICS

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Robotics is a branch of engineering and computer science that involves the conception, design, manufacture and operation of robots. The objective of the robotics field is to create intelligent machines that can assist humans in a variety of ways. Robotics can take on a number of forms. A robot might resemble a human or be in the form of a robotic application, such as robotic process automation, which simulates how humans engage with software to perform repetitive, rules-based tasks. While the field of robotics and exploration of the potential uses and functionality of robotshave grown substantially in the 21st century, the idea certainly isn't new. A robot is a type of automated machine that can execute specific tasks with little or no human intervention and with speed and precision. The field of robotics, which deals with robot design, engineering and operation, has advanced remarkably in the last 50 years.

Keywords: sensors, humanoid robot, effectors, shift robotics, robotic arm

ABS No.NCETAT-2024:162 NATURAL LANGUAGE PROCESSING

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Natural Language Processing is a technique where machine can become more human and thereby reducing the distance between human being and the machine can be reduced. Therefore in simple sense NLP makes human to communicate with the machine easily. There are many applications developed in past few decades in NLP. Most of these are very useful in everyday life for example a machine that takes instructions by voice. There are lots of research groups working on this topic to

develop more practical are useful systems. Natural Language Processing holds great promise for making computer interfaces that are easier to use for people, since people will hopefully be able to talk to the computer in their own language, rather than learn a specialized language of computer commands. For programming, however, the necessity of a formal programming language for communicating with a computer has always been taken for granted. We would like to challenge this assumption. We believe that modern Natural Language Processing techniques can make possible the use of natural language to express programming ideas, thus drastically increasing the accessibility of programming to non- expert users. To demonstrate the feasibility of Natural Language Programming,this paper tackles what are perceived to be some of the hardest cases: steps and loops.

Keywords: NLU, NLG, Sentence segmentation, lexical analysis, synthetic analysis.

ABS No.NCETAT-2024:163 DECISION MAKING IN MANAGEMENT

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Focusing on leveraging computational tools and data-driven insights, the project seeks to address the complexities and challenges associated with decision-making in the dynamic business environment. The proposed system will integrate machine learning algorithms and analytics to analyze historical data, predict future trends, and provide decision-makers with valuable information. Additionally, the project will incorporate user-friendly interfaces, allowing managers to input key variables, scenarios, and constraints, enabling the system to generate informed recommendations.

Through the application of decision trees, statistical models, and optimization techniques, the project aims to assist management in making well-informed choices, minimizing risks, and optimizingresource allocation. The system's adaptability to diverse industries and scalability will be emphasized, ensuring its applicability in various organizational contexts.

Keywords : Decision Making, Management, User Interface, Data-driven Tools, Algorithms,

Statistical Models, Machine Learning, Optimization, Resource Allocation

ABS No.NCETAT-2024:164 IMPACTS OF INTERNET OF THINGS

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The internet of things (IOT) describes a kind of network with the help of internet. IOT assists to transmit data with among devices, tracing and monitoring devices and other things. IOT makes objects 'smart' by allowing to transmit data and automating of tasks without lack of any physical interference. A health tracking wear able device is an example of simple effortless IOT in our life.

A smart city with sensors covering all its regions using diverse tangible gadgets and object all over the community and connected with the help of internet. The household devices are connected with

the help of internet, this can help to automate homes, offices or other units using IOT.It is being used during covid-19 pandemic for contact tracing.

Keywords: concept of the internet of things, educational platforms administration tools micro service technologies, scientific metrics selection of scientific partners.

ABSNO.NCETAT-2024:165 BLOOM'S TAXONOMY-BASED EXAMINATION QUESTION PAPER GENERATION SYSTEM

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Assessment process is an essential activity in educational institutions to test performance of thelearne rs. The essence of examination papers is directly linked to evaluation of quality of the graduates. Nevertheless, designing question papers is laborious task for the academics. This paperis aimed to research and analyze current assessment process and build automated examinationquestion paper generation system (AQPGS) to replace manual method practiced by academics. AQPGS prototype is intended to enable academics to produce quality examination papers on theclick, that are unbiased and aligned with learning outcomes, while saving the time and resourcesin the assessment process. System prototype was developed in Visual Basic language and connectsto MS Access database. It includes MCQ, True/False and open-ended questions. Mapping algorithmis integrated for automated categorization of open-ended questions according to Bloom's Taxonomy hierarchy, using keywords query and random selection of questions. Generated papercan be saved into text document and edited.

Key words: Assessment System, Automation, Question Paper Generator, Bloom's Taxonomy
 System , Mapping Algorithm.

ABS No.NCETAT-2024:166   DEFENDROIDAI: REVOLUTIONIZING CYBERSECURITYTHROUGH AI-POWERED ANTIVIRUS PROTECTION

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 DefendroidAI emerges as a holistic antivirus solution powered by artificial intelligence (AI), offers comprehensive protection for both mobile and desktop platforms, while also incorporating cloud security measures. Leveraging machine learning algorithms and behavioral analysis, it ensures proactive threat detection and mitigation across diverse computing environments. Moreover, DefendroidAI extends its protective mantle to encompass cloud security, safeguarding sensitive data stored in remote servers through advanced encryption and access control mechanisms. Additionally, DefendroidAI integrates WiFi security protocols, including intrusion detection and encryption technologies, to fortify wireless networks against potential vulnerabilities and cyber-attacks. Additionally, this antivirus incorporates browser sandboxing, providing an additional layer of defense against web-based threats. Through a synthesis of recent scholarly and industry literature, this paper

evaluates the efficacy, ethical considerations, and potential drawbacks of this multifaceted antivirus solution, underscoring its pivotal role in modern cybersecurity defense strategies.

Keywords: Antivirus, Malware, Threat detection, Artificial intelligence, Behavioral analysis, Signature-based detection, Heuristic analysis, Cloud security.

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