9-23-2023

National Conference on COMPUTING 4.0 EMPOWERING THE NEXT GENERATION OF TECHNOLOGY (Era of Computing 4.0 and its impact on technology and intelligent systems)

Subhrajit Pradhan Prof (Dr)

Chandan Kumar Sahoo Dr.

Tarini Prasad Pattnaik Prof.

Tamasha Priyadarshini Prof

NATIONAL CONFERENCE ON
COMPUTING 4.0
"EMPOWERING THE NEXT GENERATION OF TECHNOLOGY"

(NCCENGT-2023)

22nd to 23rd Sept 2023

ORGANIZED BY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

GANDHI INSTITUTE OF EXCELLENT TECHNOCRATS (GIET)
Ghangapatana, Bhubaneswar, Dist: Khurda, Odisha, Pin: 752054

NCCENGT-2023
National Conference
on
COMPUTING 4.0
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(Era of Computing 4.0 and its impact on technology and intelligent systems)

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PROCEEDINGS
TWO DAYS
NATIONAL CONFERENCE
ON
COMPUTING 4.0
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GENERATION OF TECHNOLOGY
"NCCENGT-2023"
DATE: 22nd & 23rd SEPTEMBER, 2023

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GANDHI INSTITUTE OF EXCELLENT TECHNOCRATS (GIET)

Ghangapatana, Bhubaneswar, Dist.: Khurda, Odisha, Pin:752054
Approved by AICTE, New Delhi, Govt. of Odisha and Affiliated to BPUT, Rourkela

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- Er.Rama Narayan Sabat
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- Mr.Susanta Kumar Swain

Prof. (Dr.) Satya Prakash Panda
Chairman,
GIET, Gangapatna, Bhubaneswar

MESSAGE

It is with great pleasure I welcome you to the "Computing 4.0: Empowering the Next Generation of Technology " conference organised by the department of CSE & MCA of GIET, Ghangapatana. As the Chairman of this institution, I am profoundly delighted to witness the convergence of some of the brightest minds in the field of computing and technology here today and I want to congratulate the Dept. of CSE and MCA for organising this event. Our institution has always been committed to fostering innovation and excellence, and this commitment serves as a testament to that commitment.

In the age of Computing 4.0, where emerging technologies such as artificial intelligence, blockchain, and quantum computing are reshaping the world as we know it, it is imperative that we, as educators and industry leaders, come together to explore and harness the immense potential that advancements offer. Our mission at Gandhi Group of Institutions is not only to empower the next generation of computing professionals but also to instill in them the values of ethical and responsible innovation. I am confident that the discussions, insights, and collaborations that will unfold during this conference will steer us towards a future where technology not only empowers individuals but also uplifts entire communities and societies. I extend my warmest regards to each one of you and wish you a fruitful and enlightening experience at the National Conference.

Dr. Satya Prakash Panda
Chairman,
GIET,Gangapatna,Bhubaneswar

Er.Rama Narayan Sabat
Vice Chairman,
GIET, Gangapatna, Bhubaneswar

MESSAGE

Dear participants and organising committee of the conference "Computing 4.0, Empowering the Next Generation of Technology"

I am happy to congratulate you all on the beginning of this significant conference on behalf of the Gandhi Institute of Excellent Technocrats. In this age of computing 4.0, we are on the cusp of a technological revolution that will cut through boundaries and alter the very foundation of our society. An innovation landscape that transcends conception is emerging as a result of the integration of artificial intelligence, quantum computing, edge computing, and the Internet of Things. It is a landscape where data becomes the basis for all decision-making, where robots learn and adapt, where connected devices speak with one another invisibly, and where human-machine collaboration reaches entirely new levels.

This conference offers a chance to examine the most recent Computing 4.0 trends and advancements and to talk about how we can use this technology to empower the younger generation.

I have no doubt that the discussions at this conference would be constructive and assist us in creating a roadmap for computing 4.0 in India in the future.

I wish you all a successful and productive conference.

Er .Rama Narayan Sabat
Vice Chairman, GIET, Ghangapatna, Bhubaneswar

Er. Minakshi Panda
Secretary,
GIET, Ghangapatna, Bhubaneswar

MESSAGE

Dear Esteemed Participants,

It gives me immense pleasure to extend a warm welcome to all of you on behalf of the Gandhi Group of Institutions. As the secretary of this esteemed institution, I am honoured to add you to the pages of the conference magazine, "Computing 4.0: Empowering the Next Generation of Technology." This event is a testament to our commitment to nurturing the future leaders and innovators in the field of computing, and it brings together some of the brightest minds in the industry and academia.

In today's ever-evolving digital landscape, the role of computing has become more pivotal than ever before. "Computing 4.0" symbolises the next phase of technological transformation, where innovation, collaboration, and exponential impact will shape our future. We believe that by fostering a platform for dialogue and knowledge exchange, we are contributing to the evolution of the next generation of computing professionals. I encourage all of you to actively participate, share your insights, and engage in meaningful discussions during the conference. Together, we can harness the power of computing 4.0 to drive positive change and inspire innovation.

Once again, I extend my heartfelt gratitude to all the participants, speakers, and organisers who have made this conference possible. Let us seize this opportunity to learn, grow, and unleash the next generation of computing enthusiasts. I look forward to the enriching experiences and fruitful collaborations that "Computing 4.0" will undeniably bring.

Minaksh Panda

Er. Minakshi Panda
Secretary, GIET,Ghangapatna,Bhubaneswar

Prof. Subhrajit Pradhan
B.E., M.Tech., (Ph.D.)
Principal,
GIET, Ghangapatna

MESSAGE

"Learning is not attained by chance; it must be sought for with ardour and attended to with diligence."

We take great pleasure and pride in hosting the National Conference on "Computing 4.0: Empowering the Next Generation of Technology (NCCENGT-2023)" from 22nd September to 23rd September, 2023.

Under the noble guidance of our management, we continue to march on the way to success with confidence. The sharp, clear-sighted vision and precise decision-making powers of our management have helped our college stay competitive in the present technological world with a remarkable position in India. The dedicated staff members and disciplined students are a real value addition to our college. This type of conference becomes a large window through which our students can peep into the modern technological world. The overwhelming response of various participants from across the world has been phenomenal, and I thank all of them for sharing their research on this platform. I take the opportunity to congratulate the staff members and students of our department and participants from our colleges and other colleges for their untiring efforts in organising and participating in this conference, and I wish the conference all the success in providing better observation, results, and future implementation for the benefit of academicians, researchers, and the student community.

The output of this conference will be a contribution to the process of national growth in terms of building a strong engineering and technology platform.

Dr. Subhrajit Pradhan
Principal
GIET, Ghangapatana

Prof. Tarini Prasad Pattanaik
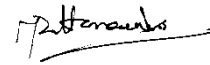Convenor NCCENGT-2023
GIET, Ghangapatana

MESSAGE

Welcoming everyone to the conference "Computing 4.0: Empowering the Next Generation" gives me tremendous joy. As the event's organiser, I felt incredibly honoured to see such amazing minds from many backgrounds come together to shape the future of computers. The spirit of innovation and transition that protects the technology environment is captured by our topic, "Computing 4.0," which we chose. In the next few days, we'll examine the profound effects of new technologies, talk about cutting-edge research, and plot a course for a time when computing will not only benefit businesses but also society as a whole.

The journey ahead promises to be both enlightening and inspiring. I encourage you to actively engage in the discussions, network with fellow participants, and seize the opportunity to foster collaborations that will drive progress in the world of computing. Together, we can unlock new possibilities and empower the next generation of innovators and problem solvers. I look forward to the insightful presentations, lively debates, and the collective wisdom that will emerge from this conference. Let us embark on this exciting voyage towards Computing 4.0, where the potential knows no bounds.

With sincere regards

Prof. Tarini Prasad Pattanaik
Convenor

Prof. Tamasa Priyadarsini
Co-Convenor, NCCENGT-2023
GIET, Ghangapatana

MESSAGE

On behalf of the organising committee, it is my great pleasure to welcome you to the conference on "Computing 4.0: Empowering the Next Generation of Technology."

This conference is a unique opportunity for researchers, practitioners, and policymakers to come together to discuss the latest advancements in computing and how they can be used to enhance the next generation. Computing 4.0 is a new era of computing that is characterised by the convergence of artificial intelligence, big data, and the Internet of Things. This convergence is leading to the development of new and innovative applications that have the potential to transform many industries and aspects of our lives.

The theme of this conference is "Empowering the Next Generation of Technology." We believe that computing 4.0 has the potential to enhance the next generation in many ways. For example, artificial intelligence can be used to develop new educational tools that are more personalised and engaging. Big data can be used to identify and support students who are struggling in school. And the Internet of Things can be used to create new and innovative learning opportunities.

We are committed to implementing the next generation through Computing 4.0. That is why we have made a special effort to attract young researchers and practitioners to this conference. We also have a number of initiatives in place to support the development of the next generation of computing leaders.

I encourage all of you to join us in implementing the next generation through Computing 4.0. Together, we can create a better future for all.

Prof. Tamasa Priyadarsini
Co-Convenor

Former Professor of Mathematics,
Utkal University,
Director Institute of Mathematics
Ph.: 9437204666

Dr. Sudarsan Padhy

MESSAGE

I send my best wishes to all attendees of the National Conference on Computing 4.0: Empowering the Next Generation of Technology (NCCENGT 2023) at Gandhi Institute of Excellent Technocrats, which is approved by AICTE, and affiliated with BPUT, Odisha and.

I am honoured to be the Chief Guest at this conference on "Computing 4.0: Emphasising the Next Generation of Technology." This is a timely and important topic, as computing is at the heart of so many of the changes that are shaping our world today. Computing 4.0 is a technology that is used to describe the next generation of computing, which is characterised by the convergence of artificial intelligence, big data, and the Internet of Things (IoT). This convergence is enabling new and innovative applications that are transforming the way we live, work, and learn.

I am particularly excited about the potential of Computing 4.0 to enable the next generation of technology leaders. Computing 4.0 is opening up new opportunities for people from all walks of life to participate in the technology industry.

I encourage all of you to embrace computing 4.0 and to use it to make a positive impact on the world. I am confident that the next generation of technology leaders will come from this conference.

I wish all the best to the organizers and participants.

(**Dr. Sudarsan Padhy**)

Tel: 0671-2506711

Email: kabatmanas@gmail.com

Principal

IMIT

Cuttack, Odisha-753008

Dr. Manas Ranjan Kabat

Resource Person

MESSAGE

Congratulations to the organizers and participants of the conference proceedings on "Computing 4.0: Empowering the Next Generation of Technology" at GIET, Ghangapatana

Computing 4.0 is a rapidly developing field with the potential to transform many aspects of our lives. It is therefore essential that we have opportunities to share new ideas and discoveries, and to discuss the challenges and opportunities that Computing 4.0 presents.

am particularly impressed by the focus of this conference on empowering the next generation of technology leaders. Computing 4.0 is a complex and challenging field, but it is also an incredibly exciting one. I am confident that the next generation of technology leaders will be the ones to solve the world's most pressing problems using Computing 4.0 technologies.

I encourage all of you to continue to learn about Computing 4.0 and to use it to make a positive impact on the world.

(**Dr. Manas Ranjan Kabat**)

Tel: 0661 246 2366

Email: mohapatrark@nitrkl.ac.in

National Institute of Technology

Rourkela, Odisha-769008

Ramesh Kumar Mohapatra
Resource Person

<u>MESSAGE</u>

With great honour and pride, I convey my warm greetings to all the delegates on National Conference on Computing 4.0: Empowering the next generation of technology (NCCENGT 2023) at Gandhi Institute of Excellent Technocrats Affiliated by (AICTE), MHRD Govt. of India, New Delhi & (BPUT), Govt. of Odisha on 22-23th September 2023.

This conference will bring academicians, programmers, IoT and data analyst, AI engineers, and technologists from all over the nation to exchange their knowledge and experience on technological advancement which has taken place in recent years. The modern world is witnessing a dynamic shift towards a more connected and technology-driven landscape. It will facilitate discussion forum for academia and industry and help build an advantageous networking for mutually beneficial research collaboration, technology development and implementation.

 I wish all the best to the organizers and participants.

(Ramesh Kumar Mohapatra)

Mob no: 7804068698

Email: raghvendra@giet.edu

Associate Professor

Department of Computer Science and Engineering

GIET University, Gunupur-765022

Dr. Raghvendra Kumar
Resource Person

MESSAGE

The national conferences are necessary to bring in culture of information exchange and feedback on developing trends in technologies. I am delighted to note that the Department of Computer Science and Engineering is organizing the National Conference on Computing 4.0: Empowering the Next Generation of Technology". Certainly, this type of conference not only brings all the researchers, students at one platform, but it also inculcates the research culture among the entire fraternity of Education in the country, thereby, contributing to the development of the nation.

I hope that this national conference would certainly induce innovative ideas among the participants paving way for new inventions and technologies in Computers and its application.

I wish the conference a grand success.

Dr.Raghvendra Kumar

Tel: 0674-30605-19/88

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Registrar

International Institute of Information Technology

Bhubaneswar, Odisha-751003

Dr. Debasish Jena
Resource Person

<u>MESSAGE</u>

I extend my heartfelt greetings to each and every delegate to the National Conference on Computing 4.0: Empowering the Next Generation of Technology (NCCENGT 2023) at Gandhi Institute of Excellent Technocrats Affiliated by (AICTE), Government of India, New Delhi & (BPUT), Government of Odisha on September 22–23, 2023, with great pride and honour.

Computing 4.0 is the next generation of technology, and it is rapidly changing the way we live and work. It is driven by the convergence of artificial intelligence, machine learning, big data, and the Internet of Things. These technologies are enabling us to solve some of the world's most pressing problems, such as climate change, disease, and poverty.
The next generation of technology leaders will be the ones who can harness the power of computing 4.0 to solve the world's problems and create a better future for all. That is why it is so important to invest in education and training in these areas. We need to make sure that everyone has the opportunity to learn about and participate in Computing 4.0.

I am excited about computing 4.0's future and think it has the potential to improve things in the world. I have faith that the next generation of technology leaders will rise to the occasion and go ahead to a better future for all.

Dr. Debasish Jena

Tel: 7008937695

Email: mrutyunjaya74@gmail.com
Associate Professor
P.G. Department of Computer Science and Applications
Utkal University
Bhubaneswar, Odisha-751003

**Dr. Mrutyunjaya Panda**
Resource Person

MESSAGE

I am immensely pleased to know that Gandhi Institute of Excellent Technocrats, Ganghapatna, Bhubaneswar is organizing the national conference titled "Computing 4.0: Empowering the Next Generation of Technology", during September 22nd and 23rd, 2023, at the institute premises.

The central theme of the conference is " Computing 4.0', which will provide an opportunity for the Researchers, Engineers, Industry persons, Educators and Students to gain the knowledge about the fourth industrial revolutions and their challenges to meet today's global scenario in terms of computing, communication, society and education perspectives.

I am privileged to say that this conference will definitely offer suitable solutions to the global issues and offer multi-level solutions through collaborations.

The success of this Conference is solely on the dedication and efforts of innumerable people who started working on the preparations in many ways to make this Conference become a reality. Eventually I express my special thanks and appreciation to all. I wish the national conference, a grand success.

Dr. Mrutyunjaya Panda

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Email: srup.it@nitrr.ac.in

Department of Information Technology,
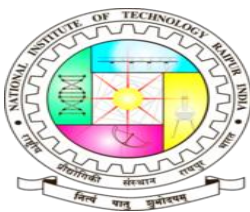
NIT Raipur

Dr. Suvendu Rup
Resource Person

MESSAGE

I extend my heartfelt greetings to each and every delegate to the National Conference on Computing 4.0: Empowering the Next Generation of Technology (NCCENGT 2023) at Gandhi Institute of Excellent Technocrats Affiliated by (AICTE), Government of India, New Delhi & (BPUT), Government of Odisha on September 22–23, 2023, with great pride and honour.

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I am excited about computing 4.0's future and think it has the potential to improve things in the world. I have faith that the next generation of technology leaders will rise to the occasion and go ahead to a better future for all.

Dr. Suvendu Rup

The Institute

Gandhi Institute of Excellent Technocrats (GIET), Ghangapatana, Bhubaneswar under the flagship of Gandhi Group of Institutions (G.G.I) is an AICTE approved institute established in the year 2009. The B.Tech, MBA and MCA programs of the institute are affiliated to Biju Patnaik University of Technology, Odisha and the Diploma program is affiliated to State Council for Technical Education and Vocational Training, Govt. of Odisha, Bhubaneswar. The institute is set up by Venkateshwar Educational Trust and is being managed by distinguished Governing Council members comprising senior executives from Academics and Industries. The Institute works with a mission to provide quality education of international standards for producing technocrats and future leaders in a disciplined and conducive environment as an integral part of our societal commitment to promote education globally. It was started with an intake of 240 students in four branches with a motto of providing quality engineering education in a highly disciplined environment. In less than a decade it become a citadel of engineering education having 1080 intake with 7 B. Tech. Courses and 2 PG courses i.e. MBA and MCA. It has been regarded as Modern Gurukul by the students, alumni, faculty and all distinguished visitors for its learning environment, faculty, infrastructure and the facilities.

The Department

The department of Computer Science And Engineering was established in the year 2011 and the department of Master in Computer Application was established in the year 2022 with an intake of 60 and 120 students respectively. We are facilitated by Operating System Lab with Linux, Software Engineering Lab with ArgoUML, Formal Automata Labs with JFlap, Database Lab with SQL server and all programming Labs. We conduct in-house training classes on latest technologies like AI, Machine Learning, IOT, cloud computing, Data science and Data Analytics, Big Data which help the students to get an immediate placement in industries. The Department frequently organize different faculty development programs, seminar, Workshops, Industrial talks And Alumni talks to enhance the technical knowledge of students as well as faculties. The department is actively involved in inviting renowned visiting professor from IIITs, NITs, IITs and other renowned Universities in order to develop the academic standards of faculties and students at large.

The Department od CSE and MCA are involved in R&D activities under the supervision of R&D Department. Our talented students are working sincerely towards their bachelor's degree and master's degree under the guidance of eminent facilities of these departments. Now the departments of MCA, CSE AND CSE(AI) has the revised intake capacity of 180,180 and 60 respectively.

About the Conference

As we enter the era of Computing 4.0, the landscape of technology and intelligent systems is rapidly evolving, with groundbreaking advancements in artificial intelligence, machine learning, data science, and beyond. The theme of this conference revolves around exploring and shaping the future of these intelligent systems that will revolutionize industries and transform the way we live, work, and interact with technology.

Conference Topics

- Quantum Computing and Quantum Information
- Edge Computing and Fog Computing
- Artificial Intelligence and Machine Learning in Computing 4.0
- Internet of Things (IOT) and Smart Cities
- Block chain and Distributed Ledger Technologies
- Cybersecurity and Privacy in the Computing 4.0 Era
- High-Performance Computing and Parallel Processing
- Augmented Reality (AR) and Virtual Reality (VR) Applications
- Cognitive Computing and Natural Language Processing
- Neuromorphic Computing and Brain-Inspired Architectures
- Autonomous Systems and Robotics
- Big Data Analytics and Data Science in Computing 4.0

CHIEF GUEST:

➢ **Dr. SUDARSAN PADHY**

Ex Director Institute of Mathematics

KEY NOTE SPEAKERS:

➢ **Dr. MRUTYUNJAY PANDA**
Asso. Prof,
UTKAL UNIVERSITY

➢ **Dr. DEBASHIS JENA**
Asso.Prof,
IIIT BHUBANESWER

➢ **Dr. SUBHENDU RUP**
Asso. Prof,
NIT RAIPUR

➢ **Dr. RAGHVENRA KUMAR**
Asso. Prof,
GIET UNIVERSITY GUNUPUR

➢ **Dr. RAMESH KUMAR MOHAPATRA**
Asso, Prof,
NIT ROURKELA

➢ **Dr. SUBASISH MAHAPATRA**
Asso, Prof,
OUTR BHUBNASWER

➢ **Dr. MANAS RANJAN KABAT**
Principal,
IMIT Cuttack

INVITED TALK

Education 5.0: An AI and Process Mining Approach

Dr. Mrutyunjaya Panda

P.G. Department of Computer Science and Applications,

Utkal University, Vani Vihar, Bhubaneswar, Odisha, India

mrutyunjaya74@gmail.com

With the fusion of Information and communication technologies with artificial intelligence revolutions, the world presents a new theoretical construction that can create a sustainable future through this digital transformation. This has lead the world towards developing Industry 5.0, Society 5.0 and more importantly in evolution of new education system Education 5.0 that will revolutionize Industry, Society and Education the way they are operating right now. It is envisaged that even though Industry 4.0 is still going on, there is a future need for fifth industrial revolution Industry 5.0 with an aim to develop new ways not only of multidisciplinary collaboration between science and technology but also to think and act differently. This will bring revolution in new education policies (NEP 2020, Govt. of India)) in science and engineering education by understanding its inside and outside boundaries with multi-level analysis of the future education 5.0 for a better social and societal cause. In order to achieve the goal and challenges of Industry 5.0 leading toward Society 5.0 and ultimately of Education 5.0, a new paradigm in teaching methodologies and techniques at the university/ college level using Artificial Intelligence (AI) and educational process mining are discussed.

Design and Development of Intelligent Systems based on Cloud of Things (CoT)

Dr. Raghvendra Kumar

Associate Professor, Department of Computer Science and Engineering
GIET University, Gunupur-765022

raghvendra@giet.edu

The advent of the Internet of Things (IoT) has revolutionized the way we interact with the physical world, enabling seamless communication between everyday objects and the digital realm. As IoT continues to evolve, the integration of Cloud Computing and IoT has given rise to the Cloud of Things (CoT), a paradigm that offers scalable, flexible, and intelligent solutions for a wide array of applications. Cloud of Things (CoT) represents a convergence of IoT and cloud technologies, enabling real-time data processing, storage, and analytics. The cloud infrastructure acts as the central hub for aggregating and analyzing data from diverse sources, facilitating data- driven insights. We discuss the importance of data analytics and machine learning in CoT-based systems. These models empower CoT systems to adapt to changing environments and user needs, making them truly intelligent.

Role of AI in Robotics & other Emerging Area of Computer Science

Ramesh Kumar Mohapatra
Associate Professor, Department of Computer Science and Engineering
National Institute of Technology, Rourkela
Odisha-769008

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Artificial Intelligence (AI) has emerged as a transformative force in the realm of robotics and various other emerging fields within computer science. AI plays a pivotal role in enhancing the capabilities of robots. AI-powered robots can perceive their environment through sensors, process data in real-time, and make intelligent decisions. Machine learning algorithms enable these robots to adapt and learn from their experiences, making them more versatile and capable of handling complex tasks. Whether it's autonomous navigation, object recognition, or human-robot interaction, AI empowers robots to operate autonomously and effectively in a wide range of applications, from manufacturing and healthcare to space exploration. Natural language processing and conversational AI are transforming how we interact with computers, paving the way for virtual assistants and chatbots that can understand and respond to human language. The integration of AI into the Internet of Things (IoT) is creating a network of smart devices that can communicate and make intelligent decisions, ushering in the era of smart homes, cities, and industries.

In conclusion, the role of AI in robots and emerging fields of computer science is profound and dynamic. It empowers robots to be more autonomous and adaptable, while also reshaping various computer science domains with its transformative capabilities. As AI continues to evolve, its impact on these fields is poised to grow, shaping the future of technology and its integration into our daily lives.

Wireless Sensor Networks in Industry 4.0

Prof. (Dr.) Manas Ranjan Kabat

Principal, IMIT, Cuttack

Abstract

Industrial Internet of Things (IIoT) is a key technology in the scenario of Industry 4.0. Industry 4.0 (I4.0) can be defined as the integration in manufacturing process of technologies, such as Big Data Analytics, Cloud Services, 3D-Printing, Cyber Security, Autonomous Robots, Internet of Things (IoT), Augmented Reality (AR), Simulation, Horizontal and Vertical Integration. An IIoT system is a combination of both hardware and software. The hardware consists smart sensors and actuator and its network infrastructure. this sensor network typically uses wireless technology, so it is a Wireless Sensor Network (WSN).

Wireless sensor networks (WSNs) refer to networks of geographically dispersed and dedicated sensors that monitor and record the physical phenomenon of the environment and forward the collected data to a base station located centrally. WSNs can measure environmental conditions such as temperature, sound, pollution levels, humidity and wind. These are similar to wireless ad hoc networks in the sense that they rely on wireless connectivity and spontaneous formation of networks so that sensor data can be transported wirelessly. The development of these WSNs was motivated by military applications such as battlefield surveillance. Such networks are used in industrial and consumer applications, such as industrial process monitoring and control and machine health monitoring and agriculture.

The IEEE 802.15.4 standard specifies medium access sublayer (MAC) and physical layer (PHY) characteristics. EEE 802.15.4 addresses Low- Rate Wireless Personal Area Network (LR-WPAN) in low cost, low power consumption and low data rate applications. Its characteristics make it to be used in several communication technologies in IoT such as Zigbee, Thread etc. The standard was developed for low power concerns, since many applications in mind are battery powered. For a longer battery life, it is necessary that the application establishes a duty cycle with operating time and reduced power state (sleep mode). There is a need of compromise between battery life and tolerable latency. The Wireless Sensor Network (WSN) plays a vital role in any IoT architecture. However, the Industry provides a large number of challenges which made the available WSN technologies inadequate. Therefore, during the last few years many researchers are working on developing new WSN standards for Industrial applications. In this presentation, an overview of WSN and applications in Industry is presented.

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The Synergy of IoT and 5G: A Revolution in Connectivity

[1]Prof. Tamasa Priyadarsini, [2]Pamali Sahoo, [3]Abinash Sahoo,
[4]Jasmin Mohanty
[1]Assistant Professor, GIET,Ghangapatna,Bhubaneswar.
[2,3,4] Students, Department Of CSE 4th Year, GIET,Ghangapatna,Bhubaneswar.

Abstract - This abstract indicates the objectives, working procedure, and outcomes of this Futuristic purpose.The primary objective is to provide harmonious, ultra-fast, and low-latency connectivity to IoT devices, enabling real-time data interchange across various industries. To smoothen the utilization of a enoromous number of IoT devices, ranging from smart cities, healthcare, manufacturing, agriculture. It also leads to Improve energy efficiency in IoT devices and networks by optimizing data transmission. In essence IOT relies on affinity ,speed and dependability provided by 5G to achieve its aim and wide spreads device interconnectivity, data collection and automation across various industries and applications.The integration of IoT and 5G operates through the various key stepsthat includes Device Communication with sensors and actuators to collect data and transmit it to 5G base stations which relay data to core networks with low latency and high bandwidth also includes Edge Computing that processes data closer to the source and enabling real-time analytics with the help of Data Analysis Data is stored for later analysis in cloud-based platforms, providing valuable insights and enabling predictive maintenance and automation.The outcome of this idea includes Low Latency, High Bandwidth, Scalability, Energy Efficiency.

Keywords: 5G,Speed, interconnectivity,Automation,Sensor.

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Paper ID: 02

Augmented Reality & Virtual Reality Application

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*Abstract -*The objective of augmented reality (AR) applications is to enhance the real-world environment by overlaying digital information such as images, text or 3-D models onto the user's view.it is used in domains including gaming, education, navigation and marketing. Virtual reality (VR) applications aim to create a fully immersive, computer – generated environment that users can interact with.The desired outcome of augmented reality applications is to provide users with enhanced understanding, engagement or convenience in their real - world surroundings. AR can help users to find directions, visualize, architectural designs or play position-based games. The outcome of Virtual Reality applications include providing users with a heightened sense of presence, interaction and engagement. For instance VR is used for flight simulations or medical training.The process of creating AR applications typically involves sensing, processing, overlaying, rendering and interaction whereas the process of creating VR applications generally involves creation , simulation, rendering, interaction, tracking. Both AR and VR applications require a combination of hardware and software technologies to achieve their objectives and their specific processes can vary depending on the application's goals and the technology used.

Keywords: Real World,3D model,AR,VR.

Paper ID: 03

The Internet of Things (IOT) In Agriculture

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Abstract - The Internet of Things (IOT) is revolutionizing agriculture by enabling farmers to collect and analyze data in real time to make more informed decisions about crop management. IOT-based applications are being used for precision agriculture, soil monitoring, and crop monitoring. Precision agriculture uses sensors to collect data on soil moisture, temperature, and nutrient levels. This data is used to create a digital map of the field, which can be used to optimize irrigation and fertilization. Precision agriculture can help farmers to increase crop yields, reduce input costs, and improve water conservation.Soil monitoring uses sensors to collect data on soil pH, moisture, and temperature. This data can be used to identify potential problems with soil health, such as nutrient deficiencies or compaction. Soil monitoring can help farmers to improve soil quality and reduce the risk of crop losses.Crop monitoring uses sensors to collect data on crop growth, health, and pests. This data can be used to identify potential problems early on, such as diseases or insect infestations. Crop monitoring can help farmers to take preventive measures to protect their crops. IOT is a powerful tool that can help farmers to improve the efficiency and sustainability.

Keywords: Agriculture,Soil,Sensor,monitoring

Paper ID: 04

Era of Large Language Models (LLM)

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Abstract - The era of large language models (LLMs) is a transformative phase in artificial intelligence and natural language processing. LLMs are trained on massive datasets of text and code, which allows them to learn the statistical relationships between words and phrases. This enables LLMs to perform tasks that were once thought to be exclusively human, such as understanding the meaning of text, translating languages, generating text, code, and other creative content, and answering questions in a comprehensive and informative way. LLMs are already having a significant impact on various sectors, including customer service, education, healthcare, media and entertainment, and research and development. LLMs offer a number of advantages over traditional NLP methods, including accuracy, robustness, and flexibility. However, LLMs also have some disadvantages, including interpretability, bias, and security. Despite these disadvantages, LLMs have the potential to revolutionize many industries and aspects of our lives. It is important to use LLMs responsibly and ethically, and to develop safeguards to ensure that they are not used to harm people or society. The LLM era is a time of great promise and potential. LLMs have the power to improve our lives in many ways, but it is important to be aware of the potential risks and challenges. We need to work together to ensure that LLMs are developed and used in a responsible and ethical manner. In conclusion, the LLM era's potential for reshaping communication, automation, and ethics in technology is underscored, emphasizing the need for responsible development and utilization in an increasingly language-driven world.

*Keywords:*LLM,GPT,NLP,Industry revolution

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Paper ID: 05

Big data analytics and data science in computing 4.0

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*Abstract -*Big data analysis and data analytics are pivotal in today's data-driven world. Big data refers to vast and complex datasets generated from various sources, including social media, sensors, and transactions. Analyzing this data provides valuable insights for businesses, governments, and organizations.Data analytics involves the systematic exploration of data to uncover hidden patterns, trends, and correlations. It encompasses descriptive analytics to understand historical data, predictive analytics to forecast future trends, and prescriptive analytics to recommend actions.Effective big data analysis and data analytics require advanced tools and techniques, such as machine learning and artificial intelligence. These technologies help process and interpret massive datasets rapidly, enabling informed decision-making.The benefits of these practices are extensive, from optimizing business operations and enhancing customer experiences to improving healthcare outcomes and streamlining government services. However, ethical considerations and data privacy concerns must accompany these endeavors.

Keywords- Data analysis,Big Data,Data Privacy.

Paper ID: 06

Internet of Things and Smart Cities

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Abstract - The Internet of Things (IoT) has emerged as a transformative technological paradigm that promises to revolutionize the way we interact with and perceive the world around us. This abstract offers a concise overview of IoT, encompassing its fundamental concepts, significance, and potential impact on society. IoT refers to a vast network of interconnected physical objects, devices, sensors, and systems, all equipped with embedded technology to collect, exchange, and analyse data. This network allows for seamless communication and collaboration between the physical and digital realms. As IoT continues to gain momentum, it finds applications across numerous domains, from smart homes and cities to healthcare, agriculture, and industrial processes. This abstract explores the core components of IoT, including sensor technology, communication protocols, cloud computing, and data analytics. It also delves into the challenges that IoT faces, such as privacy and security concerns, standardization issues, and the need for robust infrastructure. Furthermore, it highlights the potential benefits of IoT, including improved efficiency, enhanced decision-making, resource optimization, and the creation of new business models. The abstract also touches upon the ethical considerations and sustainability aspects that arise as IoT proliferates. In summary, the Internet of Things represents a technological revolution that is reshaping our world by bridging the gap between the physical and digital realms. Understanding its core concepts, challenges, and opportunities is essential for individuals and organizations seeking to harness its potential and navigate its complexities in the digital age.

Paper ID: 07

Internet of Things (IoT) and Smart Cities

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Abstract - A new era of urban development has begun with the introduction of the Internet of Things (IoT), which has made it possible to build smart cities that use technology to improve the quality of life for their citizens. The idea of IoT is examined in the context of smart cities in this abstract, throwing light on its significance, applications, and potential difficulties. Intelligent transportation systems, energy management, trash management, and public safety are some of the major IoT applications in smart cities. These programs aim to improve public safety, lessen traffic congestion, conserve resources, and lessen metropolitan areas' environmental impact. The expanding use of IoT in smart cities, however, also prompts worries about data security, privacy, and the digital divide. The potential advantages of IoT in smart cities are highlighted in this abstract, along with the difficulties that must be solved to make it work. It underlines the requirement for cautious planning, strong cybersecurity measures, and inclusive policies to guarantee that all people may benefit from IoT-driven smart cities. In conclusion, the incorporation of IoT in smart cities has the possibility of revolutionizing urban living by enhancing the effectiveness, sustainability, and responsiveness of urban environments. To solve the linked issues and make sure that the advantages are shared fairly throughout the city's diverse population, a balanced strategy is essential.

Keywords: Internet of things, Smart city, Review

Paper ID: 08

Compiler Transformations for High-Performance Computing

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Abstract - Numerous compiler changes for program optimization have been put into place over the past three decades. The majority of uniprocessor optimizations use transformations based on scalar quantity analysis and data-flow techniques to decrease the number of instructions that the program executes. On the other hand, optimizations for high-performance superscalar, vector, and parallel processors maximize parallelism and memory locality with changes that rely on keeping track of the characteristics of arrays via loop dependence analysis. The key high-level program reorganization strategies for imperative languages like C and Fortran are covered in-depth in this examination. In-depth coverage of transformations is provided for both sequential and various parallel architecture types. We present an example of each transformation's use, explain how to assess whether it is lawful, and define its intended use. This survey can be used by programmers who want to increase the performance of their code to better understand the optimizations that compilers can carry out or as a reference for manual application of techniques. Students can learn about compiler optimization techniques. This survey can be used as a reference for the majority of significant optimizations created to date as well as a bibliographic reference for the specifics of each optimization by compiler writers. The reader should be familiar with contemporary computer architecture and fundamental software compilation methods.

Keywords: Compilation, dependence analysis, locality, multiprocessors, optimization, parallelism, superscalar processors

Paper ID: 09

High Performance Computing And Parallel Processing

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Abstract - HPC is a component or technique which known to process data and perform complex and calculating at high speed compare to a standard desktop computer. Used for Scientific research and computational science. hpc systems have shifted from supercomputer to computing clusters (several nodes together make a cluster).Parallel processing is a method to improve computer system performance by executing two or more instruction simultaneously. Basically it is a technique which divide a task in some subtask and perform the operation simultaneously. Analytics for financial services, Engineering design, Weather forecasting are application of hpc. Database and data mining, real-time simulation of system, Computational astrophysics, Geoprocessing, Financial risk management, medical image are applications of parallel processing. High Performance Computing and Parallel Processing are integral to addressing the computational demands of complex problems in science, engineering, and beyond. This abstract report provides a comprehensive overview of the field, emphasizing its significance and future prospects.

Keywords: Compilation, dependence analysis, locality, multiprocessors, optimization

Paper ID: 10

Cyber Security and Privacy Issues in Industrial Internet of Things

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Abstract - Industry 4.0 is the result of research that has drawn a lot of attention over the past few decades. As a result, there has been a significant paradigm shift in the industrial and manufacturing industries. However, this presents a challenge for cyber security and emphasizes the necessity to deal with potential threats aimed at (different industry 4.0 pillars). However, several aspects need to be explored before offering a tangible answer, such as industry-wide privacy concerns and cyber security dangers. This study addresses prospective cyber security solutions for this sector and highlights the (in-depth) repercussions of hypothetical attacks and remedies in an effort to close this gap. The investigation of potential cyber-attacks against the four layers of IIoT, one of the essential components of Industry 4.0, is the paper's main topic. In this work, we have identified potential cyber threats, their effects, and countermeasures based on a thorough analysis of the current literature. In addition, we have offered a thorough framework based on a study of privacy and cyber security issues. The suggested framework helps to clarify the existing status of cyber security and lays out the general guidelines for next studies and applications.

Keywords: Industrial Internet of things (IIoT); cyber security; industry 4.0; cyber-attacks

Paper ID:11

A Study Of Cyber Security Challenges And Its Emergning   Trends On Latest Technologies

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Abstract - Cyber Security plays an important role in the field of information technology .Securing the information have become one of the biggest challenges in the present day. When ever we think about the cyber security the first thing that comes to our mind is 'cyber crimes' which are increasing immensely day by day. Various Governments and companies are taking many measures in order to prevent these cyber crimes. Besides various measures cyber security is still a very big concern to many. This paper mainly focuses on challenges faced by cyber security on the latest technologies .It also focuses on latest about the cyber security techniques, ethics and the trends changing the face of cyber security.Computer security is a vast topic that is becoming more important because the world is becoming highly interconnected, with networks being used to carry out critical transactions. Cyber crime continues to diverge down different paths with each New Year that passes and so does the security of the information. The latest and disruptive technologies, along with the new cyber tools and threats that come to light each day, are challenging organizations with not only how they secure their infrastructure, but how they require new platforms and intelligence to do so. There is no perfect solution for cyber crimes but we should try our level best to minimize them in order to have a safe and secure future in cyber space.

Keywords: cyber security, cyber crime, cyber ethics, social media, cloud computing, android apps.

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Paper ID: 12

Artificial Intelligence (AI)

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Abstract - Artificial Intelligence (AI) represents a transformative technological paradigm that simulates human intelligence in machines. It encompasses a diverse range of techniques, including machine learning, neural networks, and natural language processing, enabling computers to perform tasks that typically require human intelligence. AI's impact spans various sectors, from healthcare and finance to autonomous vehicles and virtual assistants. Its applications are continually expanding, enhancing efficiency and decision-making processes. However, AI also raises ethical and societal questions, such as privacy concerns and job displacement. As AI continues to advance, its profound implications on society underscore the need for responsible development and thoughtful integration into our lives.Artificial intelligence (AI) has transformed industries, enhancing automation, data analysis, and decision-making. Its potential for both innovation and ethical challenges is evident. The journey continues with ongoing research into AI safety, ethics, and applications, shaping our future in ways yet to be fully realized.

Keywords: Machine Learning, Deep Learning, AI Ethics, AI in Healthcare, AI in Finance, AI in Education, AI in Business etc.

Paper ID: 13

High-performance Computing and Parallel Processing

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Abstract - High-performance computing (HPC) and parallel processing represent cutting-edge paradigms in computational science, revolutionizing the way we tackle complex problems.HPC involves the use of supercomputers and high-speed networks to perform tasks at unprecedented speeds, enabling scientists, engineers, and researchers to simulate intricate phenomena, from climate modeling to drug discovery.Parallel processing, a core component of HPC,divides tasks into smaller, manageable chunks that run simultaneously on multiple processors or cores. This approach significantly accelerates computations, allowing for rapid data analysis, real-time simulations, and complex modeling of physical and biological systems.This abstract underscores the transformative impact of HPC and parallel processing on diverse fields,including physics, finance, and healthcare, by expediting the execution of intricate algorithms and simulations. Furthermore, it emphasizes the critical role of these technologies in solving grand challenges, enhancing scientific discovery,and driving innovation across industries, promising a future of unprecedented computational power and scientific achievement.

Keywords: High-performance computing, parallel processing, supercomputing, scalability, scientific computing, data analysis , synchronization, innovation, computational speed.

Paper ID: 14

Internet Of Things

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Abstract - The Internet of Things (IoT) is a network of physical objects that are embedded with sensors, software, and other technologies for the purpose of connecting and exchanging data with other devices and systems over the internet. These devices can range from simple everyday objects, such as thermostats and light bulbs, to industrial machines and complex medical devices.The IoT has the potential to revolutionize many aspects of our lives, from the way we manage our homes and businesses to the way we interact with the world around us. For example, IoT devices can be used to:Automate tasks, such as turning on lights and appliances when we enter a room or adjusting the temperature of our homes based on the weather Monitor and collect data about our environment, such as air quality, noise levels, and traffic Conditions Track and manage assets, such as inventory and livestock Provide remote control and monitoring of machines and equipment Deliver new and innovative services, such as personalized healthcare and smart city solutions.The IoT is still in its early stages of development, but it is rapidly growing and evolving. As the technology continues to mature, we can expect to see even more innovative and groundbreaking IoT applications emerge in the years to complete.

Keywords: IoT,Smart Home,Smart City,Health Care.

Paper ID:15

Augmented Reality (AR) & Virtual Reality (VR) Applications

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Abstract- Initiating with a captivating introduction, the presentation provides a foundational understanding ofAR and VR, followed by a discerning comparative analysis distinguishing between the two. Real-world applications of AR and VR, particularly within gaming, education, and healthcare sectors, are meticulously presented, emphasizing the widespread influence of these technologies. Addressing challenges such as cost implications, hardware prerequisites, and health considerations, thepresentation underscores the need for strategic advancements to mitigate potential limitations. Prospective trajectories of AR and VR are elucidated, encompassing emerging trends andbreakthroughs, affording a glimpse into the exciting possibilities on the horizon. A compelling case study effectively illustrates the tangible impact of AR and VR, highlighting their transformative prowess. The presentation culminates with an invitation for audience engagement,fostering questions, and encouraging future collaborations, thereby reaffirming the presenter'senthusiasm for the dynamic and evolving realm of AR and VR technologies.In summation, this presentation aspires to deliver a comprehensive grasp of AR and VR, inspiring exploration, and collaborative discourse within the promising domain of augmented and virtual realities.

Keywords: Augmented Reality (AR), Virtual Reality (VR), Technology, Innovation

Paper ID:16

Human-Robot Collaboration in Computing 4.0

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Abstract -In the era of Computing 4.0, a technological revolution defined by the convergence of advanced technologies like artificial intelligence (AI) and machine learning (ML), the concept of Human-Robot Collaboration (HRC) is emerging as a pivotal topic. HRC represents a transformative shift in the way humans and machines interact, with the potential to reshape entire industries, redefine job roles, and enhance overall productivity. This abstract aims to delve into the multifaceted landscape of HRC within the context of Computing 4.0, shedding light on its significance, challenges, and future prospects. HRC in Computing 4.0 harnesses the power of AI and ML to enable robots to comprehend, adapt to, and seamlessly collaborate with humans across various domains. This collaboration spans industries such as manufacturing, healthcare, logistics, and more, promising heightened efficiency, precision, and safety. The interplay between human intelligence and robotic capabilities transforms traditional workflows, creating a more flexible and dynamic environment where humans delegate routine tasks to machines, enabling them to focus on complex, creative, and decision-making aspects of their work. However, the path to effective HRC is not without its challenges. Ethical considerations, privacy concerns, and the potential displacement of human labor are critical issues that require thoughtful solutions. Moreover, ensuring that humans and robots can communicate effectively, understand context, and respond appropriately remains a formidable challenge. Achieving mutual understanding and trust between humans and machines is essential for the widespread adoption of HRC. Looking ahead, the prospects for HRC are promising. With continued advancements in AI and ML, robots will become increasingly adept at interpreting human intentions, emotions, and non-verbal cues. Additionally, innovations in natural language processing and computer vision will facilitate more intuitive and seamless interactions. HRC holds the potential to revolutionize fields such as eldercare, disaster response, and remote collaboration, where robots can extend human capabilities and reach.

Keywords: cues, intuitive, formidable

Paper ID: 17

Cyber Security In Industry 4.0 Era

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Abstract - In the era of industry 4.0, characterized by the convergence of physical and digital systems, the paramount concern is the robust safeguarding of critical infrastructure against an escalating spectrum of cyber threats. This paper delves into the multifaceted domain of cyber security within industry 4.0, examining the intricate interplay between automation, artificial intelligence, IoT, and the burgeoning network of interconnected device. It investigates the evolving threat landscape, encompassing sophisticated cyber attacks, data breaches and the potential for catastrophic disruption to production to production process. Furthermore, the research emphasizes the imperative of proactive cyber, risk assessment, employee training, and the adoption of innovation security framework to ensure the sustained integrity, availability, and confidentiality of sensitive information and operational continuity within the industrial landscape.

Keywords: burgeoning network, paramount, multifaceted, catastrophic disruption,

Paper ID: 18

Cognitive Computing And Natural Language Processing

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*Abstract -*This paper provides a summary of the latest trends, techniques, approaches, design, and applications in natural language processing and cognitive science. Cognitive computing is the third era of the digital world. It is a verity of AI technology that reads the human brain and implements it in a machine, allowing it to learn and find out how humans do overall. By using this generation task, can be completed quickly and more flawlessly than ever before. NLP is the path to recognizing and removing the useful data from the unstructured data and converting it to text. By using this, grouping data, confessing data, translating it to the machine can be possible .

Keywords: cognitive science; NLP; confessing data

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Paper ID: 19

Internet of Things (IoT) and Smart Cities

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Abstract -The Internet of Things (IoT) has revolutionized urban environments, fundamentally altering how cities function and improving residents' quality of life. This abstract delves into the intricate relationship between IoT and cities, highlighting the transformative impact of interconnected devices, sensors, and data-driven solutions on urban landscapes. IoT technologies have empowered cities to evolve into smarter and more efficient entities across multiple domains, including transportation, energy management, public safety, healthcare, and environmental sustainability. By deploying sensors and IoT devices, cities can gather real-time data, monitor infrastructure, and make data-informed decisions to optimize resource allocation. This translates into reduced traffic congestion, decreased energy consumption, enhanced air quality, and superior public services. Furthermore, IoT-driven innovations in urban settings have the potential to stimulate economic growth and foster innovation. Smart cities provide fertile ground for businesses and startups to develop innovative solutions that tackle urban challenges. The collaboration among governments, industries, and academic within the IoT ecosystem drives innovation, propelling urban development forward. However, this technological leap also introduces concerns regarding data privacy, security, and digital equity. Striking a balance between the benefits of IoT and safeguarding citizens' rights, along with addressing the digital divide, emerges as a crucial challenge for cities. In conclusion, the integration of IoT into cities represents a paradigm shift in urban development and governance. Ensuring that IoT-driven cities remain inclusive and resilient in the face of future challenges is of paramount importance.

Keywords: ecosystem; traffic congestion

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Paper ID:20

Smart city using IOT

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Abstract - The massive deployment of internet of things is allowing smart city projects and initiatives all over the world. Object used in daily life are ding equipped with electronic devicesand protocol suites in order to make them interconnected and connected to the internet. TheIOT is a modular approach to merge various senser with all the ICT solution, according to arecent study, 50billion connected objects will be deployed in smart cities by 2020. Theseconnected objects will make the author's cities smart. However, they will also open up risk andprivacy issues. As various smart cities initiatives and projects have been lunched in recent years,they have witnessed not only the expected benefits, but the risk introduced. They describe thecurrent and future trends of smart cities and IoT. They also discuss the interaction betweensmart cities and IoT and explain some of the drivers behind the evolution and development of IoT and smart city. Finally, they discuss some of the IoT weaknesses and how they can be addressed when used for smart cities. The concept of smart city has gained in recent years, driven by the need for urban development that is sustainable, efficient, and technologically advanced. Key component of smart city using IOT are smart Infrastructure, IOTsensors and devices and data analytics. Application of IOT in smart cities are Transportation,Energy Management and Healthcare.

Keywords: Urban development, smart infrastructure, Data Analytics.

Paper ID: 21

Iot Based Smart Agriculture System

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*Abstract -*Agriculture is the main occupation in our country from many decades. More than 50% population depend on agriculture. It is the main source of income and it also provide food our survival. The agricultural sector in India is losing ground on both side every day, which affects how productive the environment is finding a strategy to revive agriculture and put it back in a path of higher growth is becoming more and more important. A large-scale agricultural system necessitates extensive upkeep, knowledge, and management .But a day's farmers faced many problems like soil and water erosion, lack of modern equipment and machinery, poor irrigation ,inadequate storage facilities etc. so overcome this problem we are adopted smart agriculture techniques using IOT A network of interconnected devices known as the Internet of Things(IOT) allows for the sending and receiving of the data over the internet and the completion of activities without the assistance of a human . This technique includes various features like GPS based remote controlled monitoring, moisture &temperature sensing, proper irrigation facilities and many more. It contains the wireless sensor network for gather the information about soil property and environmental factors continuously. IOT device use in smart farming contributes to the upgrading of information and communication. We can suppose that there are more elements, like light and minerals.

Keywords: Smart Agriculture, Remote Controlled Monitoring, Fertilzers

Paper ID: 22

Cti In Action: Real World Applications And Best Practices

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Abstract -Threat intelligence is the provision of evidence-based knowledge about existing or potential threats. Benefits of threat intelligence include improved efficiency and effectiveness in security operations in terms of detective and preventive capabilities. Successful threat intelligence within the cyber domain demands a knowledge base of threat information and an expressive way to represent this knowledge. This purpose is served by the use of taxonomies, sharing standards, and ontologies. This paper introduces the Cyber Threat Intelligence (CTI) model, which enables cyber defenders to explore their threat intelligence capabilities and understand their position against the ever-changing cyber threat landscape. In addition, we use our model to analyze and evaluate several existing taxonomies, sharing standards, and ontologies relevant to cyber threat intelligence.Our results show that the cyber security community lacks an ontology covering the complete spectrum of threat intelligence. To conclude, we argue the importance of developing a multi-layered cyber threat intelligence ontology based on the CTI model and the steps should be taken under consideration, which are the foundation of our future work.

Keywords: Threat Intelligence, Cyber Threat Intelligence(CTI)Model , Analysis , Ontology .

Paper ID: 23

Internet Of Things (IOT)

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*Abstract -*The Internet of Things (IOT) refers to the ever-growing network of physical objectsthat featured an IP address for Internet Connectivity. It is also referred as Machine to Machine(M2M) Skynet of Internet of Every Thing Wireless sensor. Technology play a pivotal role inbridging the gap between the physical and virtual worlds. Enable things to respond to Changesin their the physical environment. In case of privacy, invisible and constant data exchangebetween things and people. User preference, payment information to security parameters. From refrigerators to parking spaces to houses, the IOT is bringing more and more things intothe digital fold everyday, which will likely make the IOT a multi-trillion dollar industry in thenear future. At present IOT is faced with many challenges such as Scalability Inter operability,Discovery, Data volumes and Interpretation wireless communication, Fault tolerance. Scholarsand social observers and pressmits have doubts about the promises of the ubiquitouscomputing revolution, in the areas of privacy and security. Most of the necessary technologicaladvances needed for it have already been made. The Internet of Things can be scary orthreatening to some people-too close to an automated, robotic world.

Keywords: M2M, Inter operability,Big data,wireless communication, privacy and security

Paper ID: 24

Industrial Internet of Things

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*Abstract -*The goal of the industrial internet of things is also not to fully replace human work, it is goal to enhance and optimize creating new revenue streams and business models with a big role for data analysis. The specification of IOT in industry is to improve efficiency, productivity and decision-making in industrial processes. It involves connecting machines, devices, sensors to the internet to collect and analyze data. IIOT is a transformative technology that combines the power of the internet and data analytics with industrial process and machinery. These connected things can include machines on factory floors, sensors in supply chain logistics and more. It has the potential to revolutionize industries by proving actionable insides, enhancing productivity and including manufacturing, logistics, energy and healthcare. The integration of IOT and machine learning technologies offer a range of benefits that can drive business efficiency, improve decision making and drive cost savings. IIOT in industrial settings can be profound and a significant impact on various aspect of businesses and industries.

Keywords: IOT Devices, Sensors, IOT Security, Data Analysis

Paper ID: 25

Security And Privacy In Internet Of Things

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*Abstract -*The projects address the security and privacy challenges in internet of things (IoT). IoT devices are used in many different fields of the board function including, healthcare, agriculture, and city management. The proliferation of IoT devices creates vulnerabilities that can lead the unauthorized access, insecure communication, and data breaches, improper software updates pose significant risk to IoT devices and networks. However, security and privacy are to big concern with it comes to the future of the internet of things. since most of the these "things" that are connected to the internet are simple devices with limited hardware capabilities, it is nearly impossible to the harden them via traditional resource heavy defences.

Keywords: Privacy Protection, Thread Dection, Privacy Preservation, Network Security

Paper ID: 26

Blockchain And Distributed Ledger Technology

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Abstract: - The world of digital transactions and data management has been completely transformed by blockchain and distributed ledger technology (DLT). The diverse effects of these technologies are examined in this abstract, along with their underlying ideas, practical uses, and implications for a number of different businesses. Blockchain, at its heart, is a network of interconnected nodes that facilitates secure and transparent record-keeping and is decentralised and unchangeable. This idea is broadened by DLT, which includes many types of shared, distributed databases that do not require middlemen for data validation and verification. The use of blockchain and DLT in the world of cryptocurrencies like Bitcoin and Ethereum is one of their most famous uses. To facilitate peer-to-peer transactions, these digital currencies take advantage of technology's lack of trust, potentially transforming the future. The summary concludes by emphasising the significant influence that Blockchain and Distributed Ledger Technology (DLT) have had on the digital ecosystem. These cutting-edge technologies have proven their ability to transform industries, improve security, and facilitate peer-to-peer interactions across several industries. Although cryptocurrencies like Bitcoin and Ethereum have attracted a lot of interest, supply chain management, healthcare, voting systems, and other areas can all benefit from using blockchain and DLT. Transformative opportunities are presented by their capacity to address challenges of trust, transparency, and data integrity.

Keywords: Blockchain, Distributed Ledger Technology, Cryptocurrency, Decentralization, Smart Contracts.

Paper ID: 27

Edge Computing and Fog Computing

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Abstract: - Edge computing and fog computing are two innovative paradigms that have emerged to address the growing demand for low-latency, high-performance computing in the era of the Internet of Things (IoT) and 5G networks. Edge computing involves processing data closer to the data source, typically at the network edge, while fog computing extends this concept to include intermediate network nodes. This abstract explores the fundamental concepts, benefits, and challenges associated with both edge and fog computing. It highlights their significance in enabling real-time applications, enhancing data privacy and security, and optimizing network bandwidth usage. Moreover, it discusses the role of edge and fog computing in various domains, including smart cities, healthcare, and industrial automation. As we delve deeper into the digital age, understanding and leveraging these computing paradigms will be crucial for unlocking the full potential of IoT and 5G technologies.

Keyword: Edge devices, Low latency, Edge AI, Edge Servers, Edge Security, Fog nodes, Fog networking, Fog security, Fog analytics

Paper ID: 28

Cybersecurity And Privacy In The Computing Era 4.0

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Abstract: - The Computing 4.0 era, characterized by the integration of cutting-edge technologies like Artificial Intelligence (AI), Internet of Things (IoT), blockchain, and quantum computing, has ushered in unprecedented opportunities and challenges in the realm of cybersecurity and privacy. This abstract provides an overview of a comprehensive project that explores the critical dimensions of cybersecurity and privacy in this transformative era. The primary objective of this project is to analyse, evaluate, and propose robust cybersecurity and privacy solutions to safeguard individuals, organizations, and critical infrastructure in the Computing 4.0 era. This report explores the multifaceted dimensions of cybersecurity and privacy in the Computing 4.0 era. It delves into the evolving threat landscape, where highly sophisticated cyberattacks and vulnerabilities demand innovative approaches to protect digital infrastructure. Advanced solutions, including AI-driven threat detection, blockchain's immutable ledger for secure transactions, and quantum-resistant encryption, are discussed as critical tools to safeguard data and systems. In the Computing 4.0 era presents both unprecedented opportunities and challenges in the realms of cybersecurity and privacy.

Keywords: Cybersecurity, Privacy, Data Breach, Cyber Threats, Encryption, Zero Trust Security, Privacy by Design, Compliance Regulations, IoT Security, Cloud Security.

Paper ID: 29

Cybersecurity And Privacy In The Computing Era 4.0

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Abstract: - The fact of Computing Era 4.0, With the rapid advances in technology, a new phenomenon has emerged in the current era, Industry 4.0. As the world becomes increasingly interconnected and reliant on digital technologies the importance of cyber security has never been more pronounced. This abstract provides an overview on the evolving cyber security. Cybersecurity is a disciplinary domain which is focused in safeguarding the digital technologies, system, networks, and unauthorised cyber-attacks. This has led the race between the attackers and the cybersecurity professionals who are striving to protect against these threats. The abstract identifies some key challenges in cybersecurity. Due to dynamic nature of different cyber-attacks, we required constant an adaptation and innovations in defensive strategies. The Increase in complex technology ecosystem makes a great challenging to identify and mitigate vulnerabilities effectively. An increase rate of mobile malware. The growing popularity of IoT devices. To overcome these challenges and attacks the organizations and every individual must adopt a protective approach towards cyber security. This involves implementing robust security measure such as encryption, intrusion detection system, firewalls, and a security audit every month or on a regular basis. On an additionally, rising awareness and providing a quality training to the employees of cyber security. In conclusion, cybersecurity is a dispensable aspect of our digitalised world. Computing era 4.0 is a double-edged sword promising unparalleled progress while looming a shadow of insecurity. As we embrace the era of unlimited possibilities, we must also embrace the responsibility to protect the digital rights of all individuals.

Keywords: Cybersecurity, Privacy, Data Breach, Cyber Threats, Encryption, Zero Trust Security, Privacy by Design, Compliance Regulations, IoT Security, Cloud Security.

Paper ID: 30

Autonomous Systems and Robotics

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Abstract: - This report offers a comprehensive overview of autonomous systems and robotics, exploring their wide-ranging applications across industries, from manufacturing to healthcare and beyond. It delves into the core components of autonomous systems, including perception, decision-making, and control, while highlighting the pivotal role of artificial intelligence and machine learning in enabling autonomy. It examines the pivotal role these technologies play in enhancing efficiency, safety, and productivity across industries. Key topics include the latest developments in autonomous navigation, machine learning algorithms, human-robot interaction, and the societal impact of these innovations. The report also highlights challenges and ethical considerations in the deployment of autonomous systems and robotics. Overall, this report provides a comprehensive overview of the current state and future prospects of this transformative field.

Keywords: Autonomous Systems, Robotics, Artificial Intelligence (AI),Machine Learning, Computer,Vision, Sensor Fusion,Navigation,Perception,Control Systems, Motion Planning.

Paper ID: 31

Cyber security and privacy in the Computing 4.0 Era

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*Abstract -*The advent of the Computing 4.0 Era, characterized by the convergence of cutting-edge technologies such as artificial intelligence, blockchain, and the Internet of Things, has ushered in a new era of unprecedented connectivity and innovation. However, this era also presents profound challenges in the domains of cybersecurity and privacy. This abstract provides a succinct overview of the multifaceted landscape of cybersecurity and privacy concerns in the Computing 4.0 Era. It explores the evolving threat landscape, the critical importance of data protection, and the imperative to strike a delicate balance between technological advancement and safeguarding sensitive information. By examining the latest strategies, tools, and best practices, this seminar seeks to equip participants with a comprehensive understanding of how to navigate and mitigate the risks inherent in this transformative era of computing.

Keywords: Data Protection, Balancing Innovation, Advanced AI

Paper ID: 32

Cyber Security & Privacy Computing 4.0 Era

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Abstract - "Cyber Security" are techniques generally used to prevent Cybercrime and safeguard the Cyber environment of Organization. It manages to set of techniques used to save the integrity of networks, programs and the Data from unauthorized access. Cybercrime is emerging as serious threat. To the world of computer technology, governments, police and intelligence unites are acting toward the issue closely. Different strategies are put into action. The effort is done to educate people and to expose them to the idea that it is not safe anymore to navigate in the cyber world without security.

Keywords: Cyber Security, Cybercrime, Intelligence.

Paper ID: 33

Cyber Security And Privacy In The Computing 4.0

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*Abstract -*The Computing 4.0 era represents a paradigm shift in technology, characterized by the widespread integration of artificial intelligence, the internet of Things, and advanced connectivity.This paper examines the evolving landscape of cyber security and privacy challenges in this era. Key issues include the growing attack surface, increased complexity of systems, and the need for adaptive security measures.This paper delves into the multifaceted aspects of cyber security and privacy in computing 4.0, examining the emerging threats and strategies to safeguard digital assets and personal information.

In conclusion, it is imperative to prioritize cybersecurity and privacy to ensure the responsible and secure development of Computing 4.0 technologies, with the collaboration of industry, government, and individuals.

Keywords: Computing 4.0, Cyber security, privacy, Artificial Intelligence, Internet of Things, Machine Learning, Block chain, Regulation, Threat Detection, User-Centric Controls.

Paper ID: 34

Artificial Intelligence And Machine Learning In Computing 4.0

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*Abstract -*Artificial Intelligence (AI) and Machine Learning (ML) in computing 4.0 are trans formative technologies at the forefront of modern computer science. AI refers to the simulation of human intelligence in machines, focuses on developing algorithms that allow computers to learn from and make predictions or decisions based on data, without explicit programming". The abstract underscores the immense potential of AI and ML in computing 4.0 in diverse fields, from healthcare and finance to transportation and entertainment, while also emphasizing the need for responsible development and deployment In this era, Al and ML in computing 4.0 do amazing things like recognizing pictures, understanding language, and driving cars without human help. They make our devices smarter, like personalized recommendations when shopping online or watching videos.

 In summary, Artificial Intelligence (AI) and Machine Learning (ML) in computing 4.0 are revolutionary fields of computer science. AI and ML are shaping our future, offering immense potential and challenges alike.

Keywords: Data science , big data , computer version, robotics, algorithm, parttern recognition, training data, clustering

Paper ID: 35

AI And ML In Computing 4.0

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*Abstract -*Artificial Intelligence (AI) and Machine Learning (ML) play pivotal roles in the era of Computing 4.0, which represents the latest paradigm shift in computing. In this context, AI and ML are driving trans formative advancements across various industries. AI, characterized by algorithms that mimic human intelligence, enables Computing 4.0 to enhance automation, decision-making, and problem-solving. ML, a subset of AI, empowers systems to learn from data and improve their performance over time. Together, they usher in a new era of intelligent computing. Manufacturing processes become smarter with AI-driven predictive maintenance quality control, and robotics, leading to increased efficiency and reduced downtime.Self-driving cars rely heavily on AI and ML algorithms to navigate, detect obstacles, and make real-time decisions, enhancing safety and mobility. ML models identify and mitigate cyber threats in real-time, bolstering the security of networks and sensitive data.AI chat bots and voice assistants facilitate human-computer interaction, making information access and communication more intuitive. Computing 4.0, powered by AI and ML, is marked by data-driven decision-making, increased automation, and the ability to adapt and evolve in response to changing conditions. As these technologies continue to advance, their impact on society and industries will only grow, shaping a future where intelligent systems are integral to our daily lives.

Keywords: Artificial intelligence , machine learning , decision making , problem solving , robotics, AI chat bot, chatgpt

Department of CSE, MCA, GIET, Ghangapatana, Bhubneswar, Odisha

Paper ID: 36

Block Chain & Ledger Technology

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Abstract - Block chain technology, initially designed to support cryptocurrencies like Bitcoin, has evolved into a versatile and secure ledger system. It comprises a decentralized and distributed ledger that records transactions across a network of computers, enhancing transparency, security, and trust in various domains. Block chain is a chain of blocks, each containing a list of transactions, secured through crystallographic techniques.Block chain enhances traceability and transparency in supply chains, reducing fraud and improving efficiency.cryptocurrencies like Bitcoin and Ethereum have transformed digital finance.Block chain disrupts traditional banking with faster Future trends with Integration with IoT and AI, Central banks digital currency,Tokenization of Assets,Enhanced Privacy Solutions etc.Block chain and ledger technology have the potential to revolutionize industries by promoting transparency, security, and efficiency. However, challenges like scalability and regulation must be addressed for widespread adoption.

Keywords: Block chain, Cancer, Cryptography, Scalability

Paper ID: 37

Artificial Intelligence And Machine Learning In Computing 4.0

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*Abstract -*Computing 4.0 is a new era where technology is incredibly smart and advanced. Two key players in this exciting time are Artificial Intelligence (AI) and Machine Learning (ML). They help computers think and make decisions on their own. In this era, AI and ML do amazing things like recognizing pictures, understanding language, and driving cars without human help. They make our devices smarter, like personalized recommendations when shopping online or watching videos. In healthcare, they analyse tons of data to find diseases early and suggest the best treatments. During crises, AI helps predict problems and distribute resources better.In summary, AI and ML are the superheroes of Computing 4.0, making our lives easier, safer, and more enjoyable. As they keep growing, we can expect even cooler tech and new ways to solve problems in many areas of our lives.

Keywords: Artificial Intelligence (AI), Machine Learning (ML), Computing 4.0, Technology, Autonomous systems, Personalization, Healthcare, Predictive models, Innovation, Efficiency

Department of CSE, MCA, GIET, Ghangapatana, Bhubneswar, Odisha

Paper ID: 38

Application Augumented Reality And Virtual Reality

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*Abstract -*AR and VR have made significant strides in various industries, enhancing user experiences, training, education, and more. This report highlights some key sectors where AR and VR have made a significant impact. Gaming and Entertainment: AR and VR have revolutionized the gaming and entertainment industry by providing immersive experiences. VR gaming, in particular, offers players an unprecedented level of immersion, while AR has been used in mobile games, enhancing real-world environments with digital elements. Healthcare: In healthcare, VR is employed for medical training, simulating surgeries, and aiding in rehabilitation. AR is used for providing real-time information during surgeries through heads-up displays, improving precision and reducing errors. Education: AR and VR have transformed education by making learning more engaging and interactive. Students can explore historical events, travel to different parts of the world, or dissect virtual organisms, enhancing their understanding of complex subjects. Architecture and Design: Architects and designers use VR to create 3D models of buildings, allowing clients to virtually walk through spaces before construction begins. AR aids in visualizing furniture and decor within real spaces, facilitating interior design. Manufacturing and Training: Industries utilize VR for employee training, especially in high-risk environments. It provides a safe and controlled way to practice tasks and handle machinery. AR is used in maintenance, overlaying digital instructions onto real equipment . Retail and Marketing: AR enhances the retail experience by allowing customers to visualize products in their own environment through smartphone apps. VR is used for virtual showrooms and immersive product experiences. Tourism and Travel: VR provides potential travellers with virtual tours of destinations, helping them make informed decisions. AR can offer real-time translation and information about landmarks when exploring new places.

Keywords: Artificial Intelligence (AI), Machine Learning (ML), AR, VR

Paper ID: 39

Data Robot in the field of Data Science

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Abstract - Data Robot is a cutting-edge machine learning platform designed to revolutionize predictive analytic. Its primary goal is to empower data scientists and analysts by automating and streamlining the model-building process, resulting in highly accurate predictions achieved in a fraction of the time compared to traditional methods. This platform simplifies the utilization of essential open-source modeling techniques from R, Python, Spark, H2O, VW, XGBoost, and more. Data Robot boasts an extensive library of algorithms and data preparation tools, including automated ensembling capabilities for enhanced model accuracy.What sets DataRobot apart is its ability to automate the selection of the best features, algorithms, and parameter values, eliminating the need for trial-and-error guesswork. It facilitates a smooth transition from reporting to prediction, making advanced data science accessible to a broader audience.Customers of DataRobot have reported significant improvements in data scientist productivity, prediction accuracy, and backlog reduction. By accelerating processes and eliminating tedious tasks, DataRobot allows users to focus on solving real business challenges, making it a vital tool in the world of data science.

Keywords: Data Preparation, Algorithms, Model accuracy, Model Development.

Paper ID: 40

Cognitive computing and Natural language processing help in "Drug Discovery and Drug Design"

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*Abstract -*Cognitive computing and Natural Language Processing (NLP) have revolutionized drug design and discovery, expediting the entire process. Cognitive computing, with its AI-driven analysis of extensive datasets and prediction of pharmacological properties, accelerates target validation, while NLP extracts valuable insights from unstructured text in scientific literature and clinical records, adding to the rapid identification of pertinent information. These technologies significantly reduce drug candidate attrition rates, development time, and costs, making drug re purposing for novel indications a cost-effective strategy. As the pharmaceutical industry increasingly integrates cognitive computing and NLP, the outlook for drug innovation and healthcare outcomes appears promising. So, this abstract underscores how cognitive computing and NLP streamline drug development. In the field of decision-making, reducing drug candidate attrition rates, development time, and costs. Moreover, they facilitate drug re purposing for novel indications, a cost-effective strategy.

Keywords: Pharmacological Properties, Scientific Literatures, Healthcare Outcomes, AI-Driven Analysis, NLP, Cognitive Computing.

Paper ID: 41

Internet of Medical Things (IoMT)

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Abstract - Internet of Medical Things (IoMT) is one of the thriving areas of current era which is digitization on healthcare services by connecting hospitals, medical resources, healthcare professionals and patients over Internet. Internet of Things (IoT) plays important role in IoMT to connect medical devices with each other for the communication of data between doctors ,medical staffs,hospitals and patient for offering efficient and reliable medical services . Currently ,IoMT offers various services like patient data management, diagnosis of disease, remote of healthcare monitoring, tel-surgery, etc.In this paper, the IoMT is covered with respects to its application, use cases and case studies.The analysis shows that the IoMT is one of the most growing fields of Information Technology(IT) which uses the various sensors,equipment,and devices to sense the health-related data of humans and share the data hospitalizations,doctors and healthcare professionals for remote diagnosis and treatments.However,IoMT is being adopted widely to offer tel-surgeries,real-time health monitoring and diagnosis of various diseases by integration of various technologies,still many challenges such as Interoperability,privacy and security,Energy Consumption,network latency,etc.need focus of researchers for better and accurate outcome.Here, the major challenges of IoMT are covered which will be helpful to the researcher and the medical professional for improvement in healthcare domain.

Keywords: IoT, Medical devices, Tele surgeries,sensor.

Paper ID: 42

IoT Applications In Traffic Management

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*Abstract -*The rapid urbanization and population growth in modern cities have heightened the need for innovative and efficient traffic management solutions. In this context, the integration of Internet of Things (IoT) technologies has emerged as a promising approach to optimize traffic flow, enhance road safety, and reduce congestion in smart cities. This research paper explores the applications of IoT in traffic management within the framework of smart cities. It delves into various aspects, including real-time traffic monitoring, intelligent transportation systems, predictive analytics, and smart traffic signal systems. Through a comprehensive analysis of the benefits and challenges, this study aims to provide valuable insights into how IoT can revolutionize traffic management strategies, leading to sustainable and seamless urban mobility. Additionally, the paper discusses potential future directions and recommendations for further research to advance IoT-enabled traffic management in smart cities.

Keywords: Intelligent Transportation Systems, Traffic Flow Optimization, Smart Traffic Signals, Dynamic Route Planning, Emergency Response Systems.

Paper ID: 43

IOT In Health Care

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Abstract - This paper is an overview of some of the implication of IoT on the healthcare field. Due to the increasing of IOT solutions, healthcare cannot be outside of this paradigm. The contribution of this paper is to introduce directions to achieve a global connectivity between the internet of things (IoT) and the medical environments. This revolution is redesigning the way we see healthcare form the smallest sensor to the big data collected. sAt this time, there is premise of a structure with related contraptions, people, time, spots and frameworks, which is completely converged in what is called as Internet of Things (IoT). The explanation behind a capable IoT government managed savings structure is to give solid remote seeing of patient flourishing condition, to block the essential patient conditions and to improve the individual fulfillment through sharp IoT condition. IoT enabled devices and sensors have empowered healthcare professionals to remotely monitor patients, ensure medication adherence, and streamline hospital operations. IoT technology brings numerous applications in healthcare, from remote monitoring to smart sensors to medical device integration. It keeps the patients safe and healthy as well as improves the physician delivers care towards the patients. Healthcare devices collect diverse data from a large set of real-world cases that increases the accuracy and the size of medical data.

Keywords: IoT, Medical devices.

Department of CSE, MCA, GIET, Ghangapatana, Bhubneswar, Odisha

Paper ID: 44

High Performance Computing And Parallel Processing

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Abstract - In the realm of modern computation, the fusion of High-Performance Computing (HPC) and Parallel Processing has catalyzed a paradigm shift, propelling humanity into a new era of scientific exploration and problem-solving. This abstract encapsulates the trans formative power and profound implications of these twin technologies. High-Performance Computing (HPC) delivers remarkable speed and capacity, unraveling the secrets of the cosmos and paving the way for groundbreaking discoveries. Parallel Processing, its indispensable companion, divides complex problems into manageable fragments, orchestrating a symphony of computation across multitudes of cores and nodes. Journeying through diverse landscapes, HPC and Parallel Processing power scientific insights, healthcare breakthroughs, financial analytic, and more. Together, they address profound challenges, from weather prediction to drug discovery and cyber security. In essence, this synergy illuminates new paths in innovation, accelerating our journey towards a brighter future. The central role of HPC and Parallel Processing in shaping tomorrow's world remains steadfast, proving that the power of technology knows no bounds.

Keywords: Modern computation, High performance computing, Parallel processing, Cyber Security
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Paper ID: 45

Internet Of Things (Iot) And Smart Cities

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Abstract - The large deployment of Internet of things (IoT) is actually enabling smart city projects and initiatives all over the world. Objects used in daily life are being equipped with electronic devices and protocol suites in order to make them interconnected and connected to the Internet. According to a recent Gartner study, 50 billion connected objects will be deployed in smart cities by 2020. These connected objects will make the authors' cities smart. However, they will also open up risks and privacy issues. As various smart city initiatives and projects have been launched in recent years, they have witnessed not only the expected benefits, but the risks introduced. They describe the current and future trends of smart city and IoT. They also discuss the interaction between smart cities and IoT and explain some of the drivers behind the evolution and development of IoT and smart city. Finally, they discuss some of the IoT weaknesses and how they can be addressed when used for smart cities.The integration of IoT technology in disaster management systems holds immense potential in terms of early warning, efficient response, improved coordination, and proactive citizen involvement. It aims to minimize the impact of disasters, save lives, and enhance the overall resilience of communities.

Keywords: Smart cities, Sensor System Integration, Network Architecture, Service Functions and Management, Smart grids.

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Paper ID: 46

Smart Disaster Management System Using Iot

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Abstract - The Internet of Things (IoT) has revolutionized the way we approach disaster management. IoT-based systems can be used to detect natural disasters such as earthquakes, floods, and hurricanes, and provide early warning systems to help mitigate their impact. They can also be used in disaster response management, including real-time monitoring of disaster-affected areas, tracking of relief supplies, and coordination of rescue operations. This presentation will explore the innovation of earthquake detection, with the increasing frequency and impact of earthquake worldwide, it has become vital to develop an efficient and reliability early warning system for effective disaster management. An earthquake alert system can be implemented by means of an IOT in wireless sensors network (WNS). As p wave travel faster than s wave and reaches to the sensor which helps in causing early warning signal. Sensor's value is connected to database by NodeMcu and it is stored in thin speak account. Thing speak account allows to cluster, aggregate and visualize the live data streams in the cloud. With acceleration sensors realistic value of earthquake can be recorded and warning signal cloud be sent to register stations with the help of wi-fi module on web server. The presentation will highlight the system architecture, sensors deployment, data processing techniques, and management. Additionally, it will discuss the systems potential benefits in reducing casualties and property damage during seismic events.

Keywords: *Earthquake early warning system ,wireless sensor network, Realtime data ,seismic monitoring ,alarm/alert.*

Paper ID: 47

Immersive Technologies In Healthcare And Education

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Abstract – In an increasingly digital world, the convergence of Augmented Reality(AR) in healthcare and Virtual Reality(VR) in education is reshaping the way we perceive, interact with, and understand reality. This seminar delves into the dynamic landscape of AR and VR, exploring how these technologies are breaking boundaries in healthcare and education, enriching our lives in profound ways. Augmented Reality in Healthcare has ushered in a new era in healthcare, offering unprecedented opportunities for medical professionals, patients, and educators. We will delve into the realm of AR, showcasing its applications in medical imaging, diagnosis, and surgical procedures. Real-world case studies will illustrate how AR enhances precision, reduces risks, and ultimately improves patient outcomes. Ethical considerations and regulatory challenges will also be discussed, emphasizing the need for responsible implementation. Virtual reality (VR) is redefining the educational landscape, providing immersive, experiential learning opportunities that transcend physical boundaries. This seminar explore VR's role in transforming classrooms into captivating learning environments enabling virtual exploration of historical ears, scientific concepts, and far-off lands. Attendees will gain insights into the pedagogical benefits of VR, including heightened student engagement and knowledge retention, while also considering strategies for equitable access. This abstract emphasizes the transformative power of both Augmented Reality in healthcare and Virtual Reality in education, showcasing their shared potential to push the boundaries of human experiences and knowledge acquisition.

Keywords: *Augmented Reality, Virtual Reality, Healthcare, Capitative environment, Ethical considerations, Real-world case*

Paper ID: 48

Big Data Analytics in IOT Ecosystem

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Abstract - Big data analytics is the process of uncovering trends, patterns, and correlations in large amounts of raw data, which help in make data-informed decisions. Big data analytics is the use of advanced analytic techniques against very large, diverse big data sets that include structured, semi-structured and unstructured data, from different sources, and in different sizes from terabytes to zettabytes. It Includes decision making, reduced costs, increased productivity and enhanced customer service. It is the complex process of examining large and varied data sets. IoT analytics are usually discussed in tandem with Industrial IoT (IIoT). Data is collected from a wide range of sensors on manufacturing infrastructure, weather stations, smart meters, delivery trucks, and all forms of machinery. IoT analytics can be applied to managing data centers and applications handling retail and healthcare. Big data analytics is at the core of deriving value from IoT data. It enables organizations to gain insights, improve operational efficiency, enhance decision-making, and drive innovation across a wide range of industries, including manufacturing, healthcare, agriculture, and smart cities. As the IoT ecosystem continues to grow, the role of big data analytics in extracting actionable insights becomes increasingly significant.

Keywords: Big data Analytics, Correlation, Data informed decisions, IOT analytics,IIOT, Actionable insights.

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Big Data Analytics and Data Science in Computing 4.0: Transformative Catalysts

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Abstract - The advent of Computing 4.0, marked by the convergence of cutting-edge technologies, has ushered in a new era of industrial and technological transformation. This abstract explores the pivotal role played by big data analytics and data science in driving this paradigm shift, focusing on their multifaceted applications and impacts. In the context of Computing 4.0, data science and big data analytics emerge as indispensable tools for organizations seeking to thrive in an increasingly interconnected and data-rich landscape. These disciplines empower decision-makers with insights derived from diverse data sources, fostering agility and informed decision-making in real-time.

Keywords: *Big data Analysis, Multifaceted applications, Data-rich landscape, Diverse data sources, Agility, Diverse data sources .*

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Cyber Security And Privacy In The Computing 4.0 Era

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Cyber security and privacy are critical challenges in the Computing 4.0 era, where the increasing connectivity and sophistication of devices and systems make them more vulnerable to attack. Organizations and individuals need to take a holistic approach to cyber security and privacy, including: Investing in robust security measures: This includes investing in firewalls, intrusion detection systems, data encryption, and other security technologies. Educating employees: Employees should be trained on cyber security risks and best practices. Implementing strong data privacy policies: These policies should define how personal data is collected, used, and stored. Working with suppliers and partners: Organizations should ensure that their suppliers and partners have adequate security measures in place. In addition to these measures, organizations can also take advantage of emerging technologies, such as blockchain, to improve cyber security and privacy. Blockchain is a distributed ledger technology that can be used to create tamper-proof records of transactions, track the ownership of assets, and verify the authenticity of data. By taking these steps, organizations and individuals can help to protect themselves from cyber attacks and data breaches in the Computing 4.0 era.

Keywords : Cyber security and privacy,cyber attacks and data breaches, Blockchain, ledger technology

Paper ID: 51

Privacy and Security in the Internet of Things

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Abstract:- The Internet of Things (IoT) is a rapidly growing network of physical devices that are connected to the internet and can collect and exchange data. IoT devices are used in a wide range of applications, from smart homes and wearables to industrial automation and transportation systems. While the IoT offers many benefits, it also raises significant security and privacy concerns. IoT devices are often vulnerable to attack due to their limited resources and insecure design. Additionally, the vast amount of data collected by IoT devices can be a valuable target for attackers. In 2020, during the COVID pandemic the reliability on IoT has increased as people are working from home and many of the tasks has been automated using IoT. The number of security attacks on IoT has also been increased in 2020. Some of the most common security threats in the IoT include: Malware attacks, Phishing attacks, Denial-of-service attacks, Man-in-the-middle attacks, Physical attacks and some of the main privacy concerns in the IoT include: Data collection and storage, Data sharing, Data breaches. Security and privacy are critical challenges for the IoT. By addressing these challenges, we can help to ensure that the IoT can be a safe and secure platform for innovation.

*Keyboard:*Internet of Things (IoT),Denial-of-service attacks,Phishing attacks

Paper ID: 52

Cyber Security & Privacy In The Computing 4.0 Era

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*Abstract-*In the computing 4.0 Era, which likely refers to an advance stage of technology and computing cybersecurity and privacy become even more critical here are some key considerations. Advance threats: with some sophisticated technology comes more advanced cyber threats organizations and individuals must continuously update their cybersecurity measures to defend against these evolving threats. Data privacy: as technology collects and process massive amounts of data, protecting personal and sensitive information becomes and sensitive information becomes paramount. complains with data protection regulations like GDPR and CCPA is crucial. IOT security: the proliferation of internet of things devices increases the attack surface securing these devices and the networks they connect to is vital to prevent vulnerabilities. AI and machine learning: AI-driven cybersecurity tools can both enhance security and be used by attackers. safeguarding AI systems and ensuring they are not manipulated is a challenge. Quantum computing threats: The advent of quantum computing cloud potentially break current encryption methods,developing quantum-resistant encryption is a priority. Supply chain security: As technology supply chains become more complex, ensuring the security of hardware and software components at every stage is crucial to prevent compromises.

*Keywords:*Advance threats,Supply chain security,Quantum computing threats,AI and machine learning,Data privacy

Paper ID: 53

National Conference On Computing 4.0

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*Abstract-*In the era of Computing 4.0 which combines Industry 4.0 principles, with technologies various industries worldwide have undergone a transformation. One significant aspect of this transformation is the adoption of Big Data analytics and Data Science, which play a role. This abstract delves into the influence of Big Data analytics and Data Science in the Computing 4.0 era emphasising their effects on innovation, decision making and operational effectiveness.The vast amount of data produced by devices, IoT sensors and digital processes requires analytics to gain valuable insights. Techniques in Big Data analytics allow us to process datasets and discover patterns, correlations and trends. At the time Data Science utilises machine learning algorithms and statistical models to make predictions, about results, automate tasks and improve decision making. These abilities empower organisations to optimise their production processes, cut down on expenses and enhance the quality of their products. In the age of Computing 4.0 the combination of Big Data analysis and Data Science acts as a driving force for progress. This collaboration enables businesses to make decisions based on data, foster innovation, at speeds and stay ahead in the competition. As various industries evolve during Computing 4.0 it is crucial for organisations to leverage the potential of Big Data and Data Science in order to flourish in a world that is becoming more interconnected and data driven.

Keywords : Computing 4.0, Big Data & Data Science,IOT,Data Analytics

Paper ID: 54

Big Data Analytics & Data Science In Computing 4.0

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Abstract- In the information era, enormous amounts of data have become available on hand to decision makers. Big data analytics refers to a process of extracting knowledge and data from large and complex datasets using advanced computing techniques. It is used to solve the problems including healthcare, finance and manufacturing. Data science is the entire process of collecting, analyzing, and visualizing. It uses tools and various techniques to extract the data to make suitable decision. In computing 4.0big data analytics and data science are essential for industries to stay competitive. They collect huge amounts of data from smart sensors through cloud computing and IOT platforms that allow them to uncover patterns that help them improve the efficiency of supply chain management. The main aim of big data analytics and data science in to improve and strengthen the human life and making it easier by using advanced technologies. It is used for discovering new drugs and improving accuracy in diagnoses. It is used for forecasting product demand, detecting the fraud and optimizing pricing. It is used in the field of marketing also to target the right audience and analyzing customer behavior. Using new technologies, can track data privacy and security related issues.

Keywords: Big data and data science are more important than ever, Technologies are advancing at a rapid pace, Challenges need to be addressed.

Department of CSE, MCA, GIET, Ghangapatana, Bhubneswar, Odisha

Paper ID: 55

Cybersecurity in Computing 4.0

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Abstract- The arrival of Computing 4.0 is protecting a private computer network in a transformative era of digital innovation and interconnectedness, impacting the landscape of cybersecurity and privacy. This abstract report provides a concise overview of the key challenges, emerging trends, and critical considerations in safeguarding digital assets and personal information in this dynamic environment. The Computing 4.0 era is characterized by the pervasive integration of advanced technologies such as Artificial Intelligence (AI), Internet of Things (IoT), 5G, and cloud computing into every aspect of our lives. While these innovations offer unprecedented opportunities, they also introduce novel cybersecurity and privacy risks. The threat landscape has expanded with sophisticated cyberattacks leveraging AI-driven malware and autonomous hacking tools. Threat actors now target not only traditional computing devices but also interconnected IoT devices, amplifying vulnerabilities. The increasing volume of data generated by Computing 4.0 technologies raises concerns about data privacy. Striking a balance between data utilization for innovation and protecting individuals' rights becomes paramount. Governments worldwide are responding to these challenges by enacting stringent data protection regulations like GDPR and CCPA. Compliance with these regulations is a growing concern for organizations operating in Computing 4.0. In this era, cybersecurity should be embedded into the design and development of technologies. Security-by-design principles and privacy-by-design concepts are essential to mitigate vulnerabilities. Zero Trust Architecture becomes a critical approach, as it assumes that no entity, whether inside or outside an organization, should be trusted by default. Continuous authentication and strict access controls are essential.

Keywords: Confidentiality, Integrity, Availability, Authenticity, and Non-repudiation.

Department of CSE, MCA, GIET, Ghangapatana, Bhubneswar, Odisha

Paper ID: 56

Neuromorphic Computing and brain inspired architecture

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Abstract- Neuromorphic computing refers to the design of both hardware and software computing elements using brain inspired elements neurons and synapses. Neurons use chemical and electronic impulses to send information between different regions of the brain and the rest of the nervous system. Neurons use synapses to connect to one another. Neurons and synapses are far more versatile, adaptable and energy-efficient information processors than traditional computer systems. The most common form of neuromorphic hardware is the spiking neural network (SNN). In this hardware, nodes -- or spiking neurons -- process and hold data like biological neurons. Artificial synaptic devices connect spiking neurons. These devices use analog circuitry to transfer electrical signals that mimic brain signals. Instead of encoding data through a binary system like most standard computers, spiking neurons measure and encode the discrete analog signal changes themselves. Each neuron operates on different functions simultaneously. Like the human brain, information is held in multiple places, meaning the failure of one component does not prevent the computer from functioning, hence they are highly fault tolerable. Developments in neuromorphic technology could improve the learning capabilities of state-of-the-art autonomous devices, such as driverless cars and drones. Experts predict neuromorphic computers will be used to run AI algorithms at the edge instead of in the cloud because of their smaller size and low power consumption.

Keywords: Neurons, Synapses, Adaptable, Energy-efficient, Versatile, Artificial-intelligence, Spiking neuron, Fault tolerable.

Paper ID: 57

Autonomous System And Robotics

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Abstract- Technological developments have ushered forth an epoch of innovation that lutionises sectors and alters our lifestyles profoundly. The influence and range of application of utonomous systems and robots are described in detail.Encompassing a broad range of independent-nctioning equipment and tools, autonomous systems draw extensively upon innovations in areas such as AI and high-caliber sensing mechanisms. Significant development has occurred across various tries, thanks to these innovative systems. Driven by an unwavering focus on enhancement, their rgence was fueled by efficient practices.Revolutionary changes are seen within manufacturing through autonomy integrated into industrial robotics. Industry giants such as aerospace, electronics, and automotive all rely extensively on robots, leveraging their capabilities to streamline production efficiency and precision standards. Tasks that threaten worker safety are handled by them along with boosting productivity levels.Another significant aspect of this transformation, self-driving cars stand ready to change the face of transportation forever. Greater safety on roads, fewer raffic obstructions, and greater availability will come about through the implementation of autonomous driving technology. Autonomous transportation could revolutionise how we design towns and neighbourhoods.From agriculture to transportation, drones/UAVs have gained widespread tance. Some uses cover aerial imaging, tracking, precise farming, and prompt crisis intervention. By leveraging their quickness and dexterity, these machines enable us to access hitherto inaccessible data points and accomplish missions that could never be completed conventionally.With these technologies, we witness how industries are evolving rapidly, thanks to the limitless potential they hold for novelty and advancing the standard of living. With just a small glimpse into the expansive landscape of opportunities and obstacles presented by emerging tech, this piece leaves much still unexplored. Robotics and autonomous systems offer endless possibilities for expansion..

Keywords: Industrial robotics , self driving cars , humanoid robots , medical robots.

Paper ID: 58

Applications of Augmented Reality (AR) and Virtual Reality (VR)

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Abstract- AR and VR are being used to create more immersive and realistic gaming experiences. For example, the game "Pokémon Go" uses AR to allow players to see and interact with okémon in the real world.XR is being used to create new forms of entertainment, such as virtual concerts and immersive movies. For example, the company Dreamscape Immersive has created a virtual reality experience that allows users to explore the Titanic. AR and VR are being used to ractive learning experiences that can help students learn in a more engaging way. orexample, the mpany NearForm has created an AR app that allows students to learn about anatomy by interacting with 3D models of the human body.AR and VR are being used to train surgeons, provide therapy, and diagnose diseases. For example, the company Osso VR has created an AR app that allows rgeons to practice procedures in a virtual environment.AR and VR are being used to design roducts,rain employees, and troubleshoot problems. For example, the company Siemens is using VR to train employees on how to operate new machinery.AR and VR are being used to help customers alize products, try on clothes, and shop from anywhere in the world. For example, the company IKEA is using AR to allow customers to see how furniture would look in their homes.AR and VR are being used to plan and visualize construction projects, as well as to train workers. For example, the company Trimble is using AR to allow construction workers to see blueprints and nstructions overlaid on the real world. AR and VR are being used to train pilots, design aircraft, and simulate combat situations. For example, the US Air Force is using VR to train pilots on how to fly new aircraft.AR and VR are also being used in a variety of other industries, such as travel and ourism, marketing, customer service, and customer experience. As the technology continues to develop, we can expect to see even more innovative and groundbreaking uses for AR and VR in the years to come.

Keywords: AR and VR are rapidly evolving technologies with the potential to revolutionize many industries.

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Paper ID: 59

Artificial intelligence and machine learning in computing 4.0

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Abstract- Including healthcare, finance, manufacturing, and transportation. This abstract report aims to provide an overview of the role and impact of artificial intelligence (AI) and machine learning (ML) in the context of Computing 4.0. It highlights the key advancements, challenges, and potential applications of AI and ML in this era of computing. The report begins by introducing the concept of Computing 4.0, which represents the integration of physical and digital systems through advanced technologies such as AI and ML. It emphasizes the importance of AI and ML in enabling intelligent decision-making, automation, and optimization in complex computing environments. Next, the report explores the advancements in AI and ML algorithms that have contributed to the success of Computing 4.0. It discusses the evolution of deep learning models, reinforcement learning techniques, and neural networks, which have significantly enhanced the capabilities of AI systems. Additionally, it highlights the role of big data analytics and cloud computing in supporting the development and deployment of AI and ML solutions. Furthermore, the report addresses the challenges associated with AI and ML in Computing 4.0. It discusses ethical considerations, including privacy, security, and bias, which need to be addressed for responsible implementation of AI systems. It also emphasizes the need for continuous learning and adaptation of AI models to ensure their effectiveness in dynamic computing environments. The report then explores the potential applications of AI and ML in various domains of Computing 4.0. It discusses how AI-powered intelligent automation can streamline manufacturing processes, optimize supply chain management, and improve product quality. It also highlights the role of AI in personalized healthcare, fraud detection in finance, and autonomous vehicles in transportation. Lastly, the report concludes by summarizing the key findings and highlighting the future prospects of AI and ML in Computing 4.0.

Keywords: job displacement, privacy, security, cyber threads

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Paper ID: 60

High Performance Computing (HPC) & Parallel Processing

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Abstract- High performance computing (HPC) & parallel processing technologies are remodelling computational capabilities across various domains. This report provides a concise overview of high-performance computing (HPC) and parallel processing, highlighting their importance and recent developments involves the use of supercomputers, clusters to solve complex problems faster & enhancing computational capabilities across industries. Parallel processing is a core component of HPC, enables multiple tasks to run simultaneously, enhancing computational speed and efficiency. This report outlines the significance of HPC in scientific research, weather prediction and data-intensive applications. It also explores parallel programming paradigms and challenges associated with scalability and synchronization. Recent advancements in HPC, such as Graphics Processing Unit (GPU) acceleration, quantum computing & Exa scale computing, are also discussed. The report underscores the potential transformative impact of these developments on various industries. HPC and parallel processing find wide-ranging applications in scientific research, weather forecasting, fluid dynamics, molecular modelling and genomics. They play a pivotal role in simulating complex physical phenomena, optimizing designs, predicting climate pattern and accelerating drug discovery. Additionally, HPC facilitates data analytics, machine learning, and artificial intelligence, propelling advancement in understanding human behaviour, optimizing business strategies, and enabling autonomous systems. The application of these technologies continues to expand, empowering break throughs in diverse domains. This abstract report offers a concise yet comprehensive glimpse into the world of high-performance computing and parallel processing. It underscores their vital role in addressing complex & computational challenges and paves the way for further exploration into the limitless possibilities of this dynamic field.

Keywords: Parallel Processing, Supercomputer, Cluster Computing, Distributed Computing, Heterogeneous Computing, Distributed Memory, Shared Memory

Paper ID: 61

AI AND ML COMPUTING 4.0

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Abstract- The fourth industrial revolution has brought about significant advancements in artificial intelligence (AI) and machine learning (ML) technologies that are reshaping the way businesses operate, including web development. AI and ML computing 4.O in web development have the potential to increase productivity and efficiency, but they also raise ethical concerns related to job displacement, privacy, and security.AI and ML technologies are being used to automate tasks such as website design, content creation, and optimization. These technologies can help developers create personalized user experiences and improve website performance. However, they also raise concerns about job displacement and the potential for biased algorithms. Data privacy and security are also significant ethical concerns in web development. AI and ML technologies collect and process vast amounts of personal information, raising concerns about how this data is being used and who has access to it. Organizations must ensure that they comply with ethical standards and regulations to protect individuals' privacy rights. They must also take steps to secure their systems against cyber threats and data breaches.AI and ML computing 4.O in web development has the potential to transform the industry, but it is crucial to address ethical concerns related to job displacement, privacy, and security. Developers must take a proactive approach to address these ethical concerns, including engaging with stakeholders, developing ethical guidelines, and implementing accountability mechanisms. By doing so, we can harness the potential of these technologies while ensuring that they are used responsibly and ethically in web development.

Keywords: job displacement, privacy, security, cyber threads.

Paper ID: 62

Agriculture 2.0: IoT-Driven Solutions for Sustainable Farming

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Abstract The application of IoT (Internet of Things) in agriculture marks a transformative paradigm shift in the industry. IoT technology offers a multitude of solutions to address the multifaceted challenges facing modern agriculture. This report delves into the extensive array of applications that IoT brings to the agricultural sector, emphasizing its potential to revolutionize traditional farming practices empowers farmers with real-time data on soil conditions, weather patterns, and crop health. It facilitates precision agriculture, leading to optimal resource utilization and increased crop yields. Livestock management benefits from IoT wearables and sensors that monitor the health and behaviour of animals, improving overall herd management. Despite its promising advantages, the widespread adoption of IoT in agriculture faces challenges related to cost, connectivity, and data security. Collaborative efforts between governments, industry stakeholders. In conclusion, IoT in agriculture is a game-changer, enabling data-driven decision-making and enhancing productivity. It optimizes resource usage, reduces waste, and fosters sustainability. Nevertheless, addressing cost concerns, improving connectivity in rural areas, and fortifying data security are imperative for seamless adoption. With these challenges tackled head-on, IoT promises to usher in an era of smart and efficient farming practices. As the world grapples with the pressing need to feed a burgeoning global population while preserving our environment, IoT emerges as a beacon of hope for the agricultural sector, offering a path to sustainable, technologically advanced farming.

Paper ID: 63

Cybersecurity And Privacy In The Computing Era 4.0

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Abstract- The advent of Computing 4.0, with its rapid technological advancements, has a new era of connectivity, automation, and innovation. However, this digital revolution has also brought about significant challenges related to cybersecurity and privacy. This abstract report aims to provide a simplified overview of the key issues, solutions, and implications concerning cybersecurity and privacy in the Computing 4.0 era. In this era, where every aspect of our lives is becoming increasingly digital, ensuring the security and privacy of our personal and sensitive data is of paramount importance. It explores the evolving threat landscape, where cyberattacks have become more sophisticated and widespread. From ransomware attacks crippling critical infrastructure to phishing attempts targeting individuals, the risks are diverse and ever-present. To mitigate these risks, organizations and individuals must adopt proactive security measures, including robust firewalls, encryption, and regular security awareness training. Privacy concerns have also escalated in the Computing 4.0 era. The report discusses the pervasive collection of personal data by tech companies, the challenges of consent and data ownership, and the role of legislation like GDPR and CCPA in safeguarding user privacy. Individuals are encouraged to be more mindful of their digital footprint, exercise their rights under privacy laws, and use privacy-enhancing technologies. In addition to threats and challenges, the report examines solutions for enhancing cybersecurity and privacy. It emphasizes the importance of multi-factor authentication, strong password practices, and regular software updates. It also highlights the role of Artificial Intelligence (AI) and Machine Learning (ML) in identifying and responding to cyber threats in real-time. Furthermore, the report underscores the need for international cooperation in combating cyber threats, as attackers often operate across borders. It calls for public-private partnerships to develop cybersecurity standards and share threat intelligence. In conclusion, as we navigate the Computing 4.0 era, cybersecurity and privacy remain critical concerns.

Keywords: Cybersecurity, Privacy, Data Breach, Cyber Threats, Encryption, Zero Trust Security, Privacy by Design, Compliance Regulations, IoT Security, Cloud Security

Paper ID: 64

Big Data Analytics And Data Science in computing 4.0

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Abstract- Computing 4.0 is the fourth industrial revolution, characterized by the convergence of digital, physical, and biological technologies. It is enabled by key technologies such as big data analysis, data science, the Internet of Things (IoT), cloud computing, and artificial intelligence (AI). Big data analytics and data science have become crucial components in the era of Computing 4.0. With the exponential growth of data, organizations are increasingly relying on these technologies to extract valuable insights and make informed decisions. This abstract report provides an overview of the role of big data analytics and data science in Computing 4.0, highlighting their importance and potential applications. Big data analysis is the process of extracting meaningful insights from large and complex datasets. It is essential for Computing 4.0, as it enables businesses to make better decisions faster, improve efficiency and productivity, and develop new products and services.Data science is a multidisciplinary field that combines statistics, computer science, and domain expertise to extract knowledge from data. Data scientists use a variety of tools and techniques, including big data analysis, machine learning, and artificial intelligence, to solve complex problems.

Keywords: cloud computing,internet of thing,cloud computing.

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Paper ID: 65

Artificial Intelligence (AI) for Sustainability

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Abstract- AI technologies have the capacity to enhance environmental conservation and resource management through predictive analytics, data-driven decision-making, and optimization techniques. From optimizing energy consumption in smart cities to predicting deforestation and wildlife poaching, AI empowers stakeholders to make informed choices that reduce environmental impact. However, the adoption of AI for sustainability is not without challenges. Ethical considerations, data privacy, and biases in AI models must be carefully addressed to ensure equitable and responsible AI deployment. This abstract underscores the transformative potential of AI in advancing sustainability across sectors, highlighting its ability to drive informed decision-making, resource efficiency, and innovative solutions to global challenges. To harness AI's full potential for sustainability, interdisciplinary collaboration, ethical guidelines, and a commitment to responsible AI practices are essential. AI plays a crucial role in disaster management and resilience, offering early warning systems, disaster recovery optimization, and efficient resource allocation in times of crisis.

Keywords: Sustainable AI,AI ethics,Sustainability,Responsible AI,Sustainable development.

Cyber security and privacy in the Computing 4.0 Era

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Abstract - The Computing 4.0 Era has ushered in a new wave of technological advancements, where the fusion of cutting-edge technologies such as Artificial Intelligence, Internet of Things, Edge Computing, and Blockchain has revolutionized the way we live, work, and connect. This seminar delves into the intricate landscape of safeguarding digital ecosystems and personal information in the Computing 4.0 Era. We explore the evolving threat landscape, including emerging cyber threats like AI-powered attacks and quantum computing vulnerabilities, which demand innovative defence strategies. Additionally, we dissect the intricate web of data privacy regulations, including GDPR and CCPA, which have transformed how organizations handle personal data. Our discussions will encompass the latest security technologies, such as zero trust architecture and secure multi-factor authentication, that are pivotal in fortifying digital fortresses. Ethical considerations, including responsible AI development and data handling ethics, will also be explored as integral aspects of our digital future.

Keywords: IoT Security, GDPR and CCPA, Ethical consideration, Digital landscape

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Cyber Security & Privacy Computing 4.0 Era

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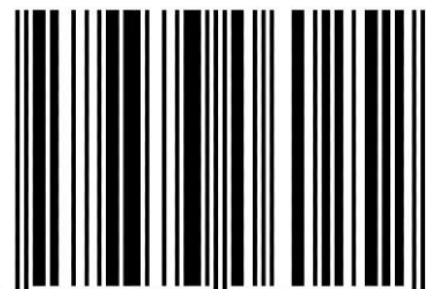
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Abstract - Cybersecurity is a critical aspect of our increasingly digitized world. This abstract provides an overview of the cybersecurity landscape, emphasizing its importance in safeguarding data, privacy, and critical infrastructure. It touches on key concepts such as threat detection, encryption, and risk management. The abstract also highlights the evolving challenges posed by cyber threats and the need for continuous adaptation. Join us to explore the world of cybersecurity and understand its vital role in securing our digital future.

Keywords: Cyber Security, Network Security, Cyber Threats Malware

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