



TECHCHRONICLES

NOV 2024

BIANNUAL EDITION

DEPARTMENT OF CSE

AHALIA  **SCHOOL OF ENGINEERING AND TECHNOLOGY**



Ahalia Health Heritages and Knowledge, Ahalia Campus, Kozhippara, Puduserry
East, Kerala 678557

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AHALIA SCHOOL OF ENGINEERING AND TECHNOLOGY (ASET)

ABOUT

Ahalia School of Engineering & Technology (ASET), Palakkad, an ISO 9001:2015 certified institution, is approved by All India Council for Technical Education (AICTE) and is affiliated to the A. P. J. Abdul Kalam Technological University, Kerala. We provide world-class technical education and training in the fields of Science, Engineering, Technology and Management to meritorious students from diverse socio-economic backgrounds. The college is located in a lush green campus with a beautiful view of the Western Ghats. It provides a peaceful and congenial atmosphere, ideal for students for their overall holistic development. Ahalia School of Engineering and Technology offers five Bachelor of Technology (B.Tech.) courses in Civil Engineering, Computer Science and Engineering, Electrical and Electronics Engineering, Electronics and Communication Engineering and Mechanical Engineering, that is complemented by various co-curricular and extra-curricular activities. ASET is one of the several institutions in Ahalia Campus.

VISION

Grow as a centre of learning and research, transforming students to professionals with knowledge , skill, competence, commitment, confidence and ethics to serve the society

MISSION

To impart value-based education and promote curricular, co-curricular & extracurricular activities amongst students through extensive theoretical & practical training by qualified and experienced personnel using state-of the-art facilities. To promote research and consultancy for institution development and contribution to the society

Principal Message



I am very happy that dept of computer science is bringing out this newsletter. It is my pleasure to present to you the new issue of "**Techchronicles** " covering various events and achievements of the students, faculty members, staff and alumni of CSE dept . We have conducted technical workshops, hands on sessions and expert sessions over these time period , which have brightened the young minds ,so that they are ready to face the challenges ahead. I am very happy and proud to note that the staff and the students have actively taken part in various academic, sports, cultural and research activities .In the days to come, staff and the students should try their best to learn advancements in AI, quantum computing, edge computing and programming for robotics . My heartiest congratulations to all of them for the wonderful achievements. Wish you a happy reading

Dr. P.R. Suresh - Principal

COMPUTER SCIENCE AND ENGINEERING

ABOUT

The Department of Computer Science and Engineering at the Ahalia School of Engineering and Technology, Palakkad was started in the year 2012 at the time of starting of the engineering college and provides an outstanding academic environment complimented by excellence in teaching. The department offers B.Tech degree. The Department has a comprehensive syllabus on topics covering all the aspects of computer hardware and software with an emphasis on practical learning. The course structure includes courses on latest topics to equip our students with the latest developments in computer science and engineering.

VISION

To develop engineers with knowledge and computing skills to become successful in their profession and service to the society.

MISSION

To practice effective teaching-learning methods that would ensure the production of quality graduates. To expose students and faculty to advancements in the field of computer science and engineering through workshops, seminars, industrial collaboration, etc. To promote an understanding of other branches of knowledge through interdisciplinary research and projects. To develop a strong sense of ethics in the students and emphasise awareness about the social and legal issues.

Message From HOD

Dear Students,

It gives me immense pleasure to reach out to you all through this edition of our student magazine. I am proud to witness the incredible enthusiasm, innovation, and dedication each one of you brings to the Computer Science and Engineering (CSE) department. Your curiosity, hard work, and continuous drive for excellence are what make our department a thriving hub of learning and growth.



As we move forward in this rapidly evolving world, technology continues to shape every aspect of our lives. We are witnessing transformative advancements in areas such as Artificial Intelligence (AI), Machine Learning (ML), Blockchain, the Internet of Things (IoT), Quantum Computing, and Cybersecurity. These are no longer concepts of the future, but technologies that are actively shaping the present and demanding new skill sets. I encourage each one of you to explore these fields, stay updated, and actively engage with them in your projects and research work.

Ahalia School of Engineering and Technology College is committed to providing the best platform for you to build your future. With the introduction of newer technologies and collaborations with industry, we aim to equip you with the tools to innovate and lead in your careers. I urge all students to take advantage of these opportunities and strive to become pioneers in this dynamic and ever-evolving field.

Remember, learning is a lifelong journey, and the best way to predict the future is to create it. I have no doubt that you all will contribute to the development of cutting-edge technologies and solutions that will have a lasting impact on society.

I wish you all the very best in your academic endeavors, and I look forward to seeing the remarkable achievements and contributions you will bring to the world of technology.

Dr. S. Gunasekaran
Professor, Head of Department – CSE

PLACEMENTS

Congratulations to the 2024 batch students who have successfully secured placements at TCS, 6D Technologies, iWave, Mitsogo, Speridian, UST Global. Your hard work and dedication have paid off, paving the way for a bright future ahead. Best of luck in your new journey!



P Rithesh
(2020-24 Batch)



Sujith J
(2020-24 Batch)



Harikrishnan K C
(2020-24 Batch)



Aswanth Krishna M
(2020-24 Batch)



Abhishek S Kumar
(2020-24 Batch)



Anand K V
(2020-24 Batch)



BINOJ B.
CSE 2020-24 BATCH



PRANAV SUNIL
CSE 2020-24 BATCH

iWave

mitsogo



Vishnuram B
CSE 2020-2024



Divya Krishna P

Divya Krishna P
CSE 2020-2024



Business focus. Technology-fueled innovation. Delivery excellence.



ASHWIN SURESH
CSE 2020-2024

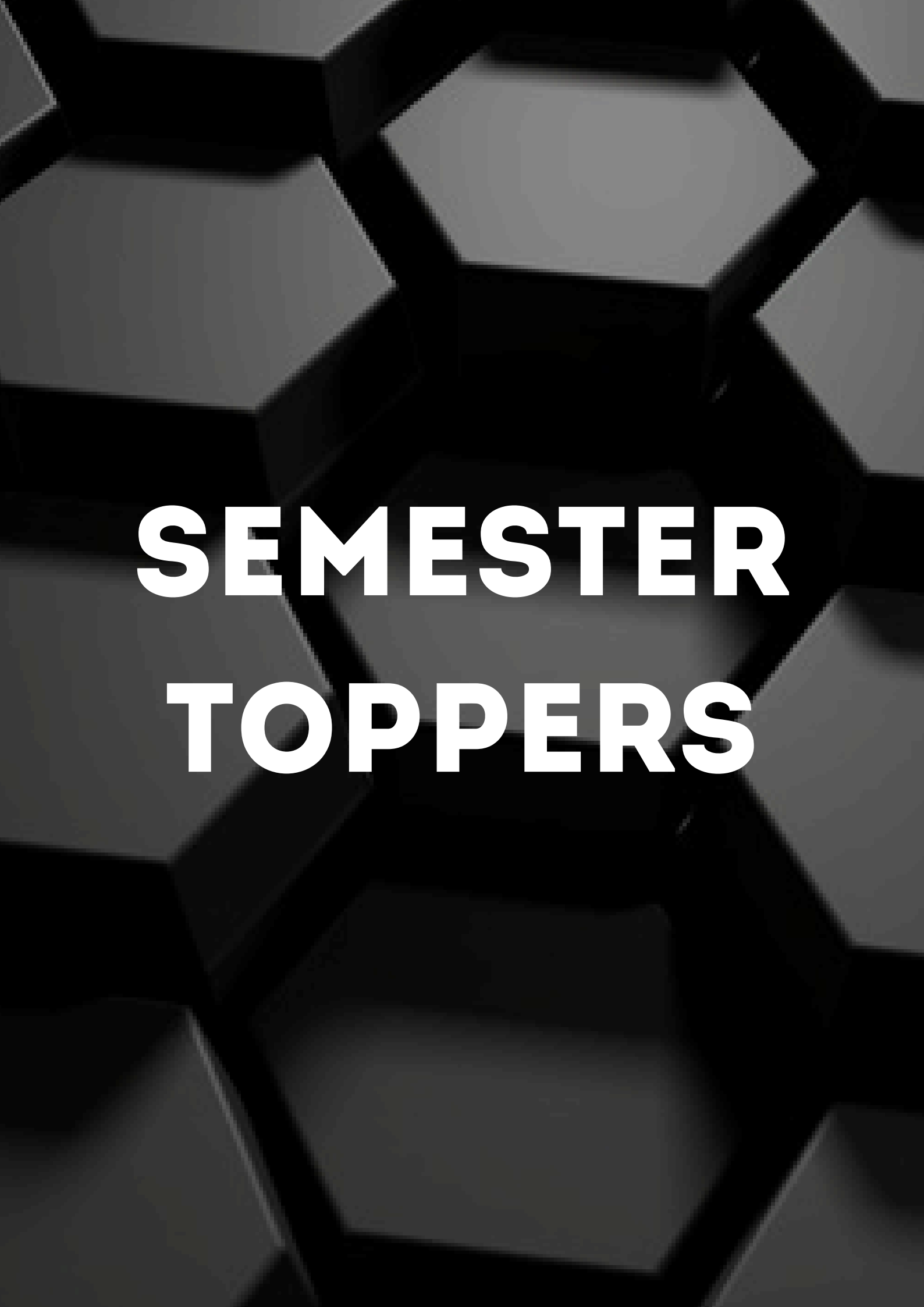


Aswanth Krishna M
(2020-24 Batch)

GRADUATION DAY

Graduation marks the culmination of years of dedication, growth, and learning. As the 2020-2024 batch embarks on new journeys, this milestone signifies not only academic achievement but also the beginning of new opportunities and challenges. Wishing all graduates success in their future endeavors.





SEMESTER TOPPERS

S2 CSE-A



S2 CSE-B



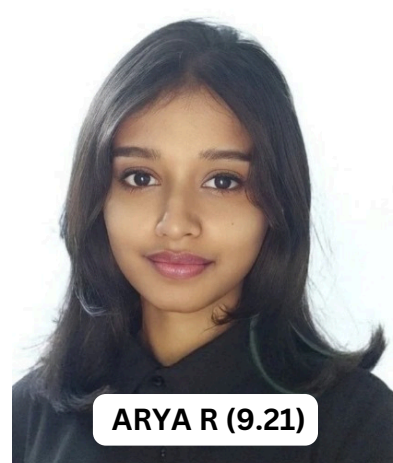
S4 CSE



S6 CSE



S8 CSE



COGNITIVE COMPUTING AND ITS APPLICATIONS

Dr.RESHMI B
ASST PROF CSE



AI, ML, and Cognitive Computing are the most "wow words" of our day, and while they aren't overly hyped, they are fascinating for technological breakthroughs such as autonomous vehicles, quantum computing, and natural language processors. Let's take a look at what cognitive computation is and how it's used.

Receiving, Storing, Developing, Transforming, and Recovering Information are all part of the cognitive process. They have to do with the human brain's perception, attention, and memory functions. Is it possible for a machine to accomplish brain-like functions? Yes, with the current technological revolution that continues to amaze us every day, nothing is impossible!

We've seen how a computer can recall data. But how will it be able to do so? A computation is the conversion of one memory state to another, which is what mathematicians call a function.

Cognitive computing is a hybrid of Cognitive Science and Computer Science, with the goal of simulating human mental processes in a digital form. Cognitive computing makes use of cognitive science theories to create algorithms. These findings will have far-reaching implications in areas such as healthcare, energy and utilities, banking and finance, retail, transportation and logistics, enterprise management, security, education, and many more.

Machine Learning analyses data and draws conclusions and patterns using statistical models and algorithms. It adjusts to new data without the need for human involvement. It gives computers the ability to learn from pre-programmed algorithms. Artificial Intelligence, on the other hand, equips computers with algorithms that allow them to work intelligently. Machines can use this intelligence to tackle complex issues and make judgments that increase their chances of success.

Cognitive computing is a self-learning system that uses Machine Learning and Data Mining algorithms, Neural Networks, and Visual Recognition to perform human-like tasks intelligently. To address complicated issues, cognitive computing focuses on simulating human behaviour and cognition. It learns at scale, reason with purpose, and interacts with humans naturally. Cognitive Computing methods mostly rely on Deep Learning methods and Neural Networks.

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To examine patterns and identify what is offered in the photo/video, visual recognition employs Deep Learning and neural network algorithms. It looks for scenes, objects, writing, and other subjects in photos. Google Lens, which uses our phone's camera to capture photographs and deliver information about the object, is a fantastic example of visual recognition. The ability to interpret human language is known as natural language processing (NLP). It also understands a large amount of natural language data and processes it, and analyses it to make inferences. A very common example of NLP is the smart compose feature of Gmail, where it suggests next words and sentences to write. After writing an email, it suggests the mood of the content – for, e.g. Formal, Offensive, Appreciative, and Anger.

A pocket calculator can solve arithmetic problems, but no matter how much it is used, it will never enhance its speed or accuracy. It doesn't learn: when I press the square root button, it computes the same function in the same way every time. The human ability to learn is a fascinating aspect of general intelligence. We already know how a computer/machine can remember and compute, but how can it learn? It computes a function and appropriately arranges and can calculate any computable function. For matter to learn, it must instead rearrange itself to get better and better at computing the desired function. The brain learns much more efficiently based on the same idea. The network of interconnected neurons can learn analogously. Cognitive Computing can analyse large amount of structured and unstructured data and make recommendations. It is capable of doing so in any field, including healthcare, finance, law, and education.

ETHICS AND RESPONSIBLE TECH

Ms HAPPY A
ASST PROF CSE



As technology advances, ethical issues have become increasingly important. Key areas of focus include:

1. AI Ethics and Fairness

- Bias in AI: AI systems can produce biased outcomes due to the data they're trained on, leading to unfair decisions in areas like hiring and law enforcement. Efforts are being made to create more inclusive, fair AI models.
- Explainable AI: AI decisions are often opaque, making them difficult to understand. Explainable AI aims to increase transparency so users can comprehend and trust how decisions are made, especially in critical sectors like healthcare and finance.

2. Data Privacy and Ownership

- User Consent: Regulations like GDPR and CCPA give individuals more control over their data. Companies are required to obtain clear consent for data usage, providing users rights to access and manage their personal information.
- Ethical Data Use: Beyond compliance, companies are focusing on using data ethically, avoiding exploitative practices such as invasive advertising or manipulation based on personal data.

3. Algorithmic Transparency and Accountability

- Transparency: Algorithms influence important decisions, yet their workings are often hidden. The push for transparency ensures that algorithms are fair and can be audited for accountability.
- Accountability: As automation expands, defining responsibility for system failures is critical, particularly in high-risk areas like autonomous vehicles and healthcare.

4. Sustainability in Technology

- Reducing Carbon Footprint: Tech companies are increasingly focused on reducing their environmental impact. Efforts include using renewable energy for data centers and designing more energy-efficient hardware.
- E-Waste: Ethical tech also involves reducing e-waste through sustainable product design, focusing on repairability and recyclability, and sourcing materials responsibly.

5. Social Responsibility and Digital Well-Being

- Mental Health: Concerns about screen addiction and harmful online content have prompted companies to explore tools for healthier digital engagement, such as usage limits and content moderation.
- Digital Divide: Expanding access to technology in underserved areas is vital for reducing inequality. Ethical tech aims to bridge the digital divide by providing affordable devices and expanding internet access.

BRIDGING PHYSICS AND INTELLIGENCE: THE NOBEL PRIZE THAT REVOLUTIONIZED AI

JOEL T AJU
CSE TEACHING ASSISTANT



This year, the 2024 Nobel Prize in Physics was awarded to two visionaries in artificial neural networks, John Hopfield and Geoffrey Hinton, whose work laid the foundation for modern Artificial Intelligence (AI) and Machine Learning (ML). Their discoveries have created a bridge between the world of physics and the cutting-edge field of intelligent computing, proving that interdisciplinary collaboration can unlock powerful technological advancements.

The Science Behind the Award

At its core, artificial intelligence relies on systems called neural networks, which are modeled after the human brain's neurons. These systems can process information, learn, and even adapt through layers of interconnected nodes, much like how biological neurons interact. Neural networks are integral to everything from image and speech recognition to data processing and medical diagnostics.

In the early 1980s, John Hopfield introduced the Hopfield network, one of the first computational models inspired by brain activity. His network emulated how human brains store and retrieve memories, and it became a cornerstone in the development of AI. This model showed that memory and processing could be encoded into a system's structure—a breakthrough that began blurring the lines between human cognition and machine learning. Meanwhile, Geoffrey Hinton, a renowned computer scientist and cognitive psychologist, developed the Boltzmann machine, an influential neural network that could learn from large datasets. It enabled computers to recognize familiar patterns in new data a fundamental capability in today's AI systems. This structure gave rise to systems that now fuel breakthroughs in deep learning and big data analytics.

The Physics Connection

Although their work is typically categorized as computer science, the Nobel Committee emphasized that their neural network models were deeply rooted in the physical sciences. Both researchers applied concepts from thermodynamics, statistical mechanics, and energy minimization to understand how neurons in a network could be trained to process information. This integration of physics into computational models is what allowed their work to transcend boundaries, transforming not only AI research but also its applications in scientific disciplines like particle physics, material science, and even climate modeling.

The Real-World Impact

Hopfield and Hinton's pioneering efforts are now shaping how we interact with AI in everyday

life. From self-driving cars to personal assistants like Siri and Alexa, their discoveries power the

very technologies we take for granted. Their work has also been instrumental in healthcare, where

AI systems are used to detect diseases at earlier stages, and in astrophysics, where machine

learning helps analyze vast quantities of data to uncover insights about the universe.

The fact that this Nobel Prize in Physics was awarded for achievements in AI speaks volumes

about the evolving landscape of science. It underscores that the future of innovation lies at the

intersection of multiple disciplines.



CSE EVENTS

CSE ASSOCIATION INAUGURATION

TECHNOCRATZ

The Department of Computer Science Engineering at ASET inaugurated the Technocratz Association on 29th August 2024. The event commenced with a prayer song, followed by a welcome address by Dr. R. Sivakumar, Professor and HOD of AI and ML. Dr. P.R. Suresh, Principal of ASET, delivered the Presidential Address, and Dr. Krishna Kumar Kishore, Vice Principal, delivered an inspiring speech. Dr. S. Gunasekaran, HOD of CSE, delivered the Inauguration Address, and Chief Guest Dr. Nikhil Krishnan M, Assistant Professor of Data Science at IIT Palakkad, provided an inspiring speech. The association coordinator, Dr. Reshmi B, briefed the association activities and introduced the office bearers while Ms. Amritha Devadasan introduced the associate clubs, including the Coding Club, Hackathon Club, and Media Club. Dr. Nikhil Krishnan M. officially launched the association's logo and clubs. The event concluded with a vote of thanks by P. K. Sangameswar, President of the Technocratz Association.



Cybersecurity Workshop

The *Department of Computer Science Engineering* at ASET inaugurated the Technocratz Association on 29th August 2024.

Following the inauguration, a workshop on "Cybersecurity and Ethical Hacking" was conducted by Neeraj O, a Cybersecurity Analyst and Cyber Forensic Investigator. The workshop, held from 11 am to 4 pm, provided valuable insights into cybersecurity and ethical hacking practices, equipping students with essential skills for the field.



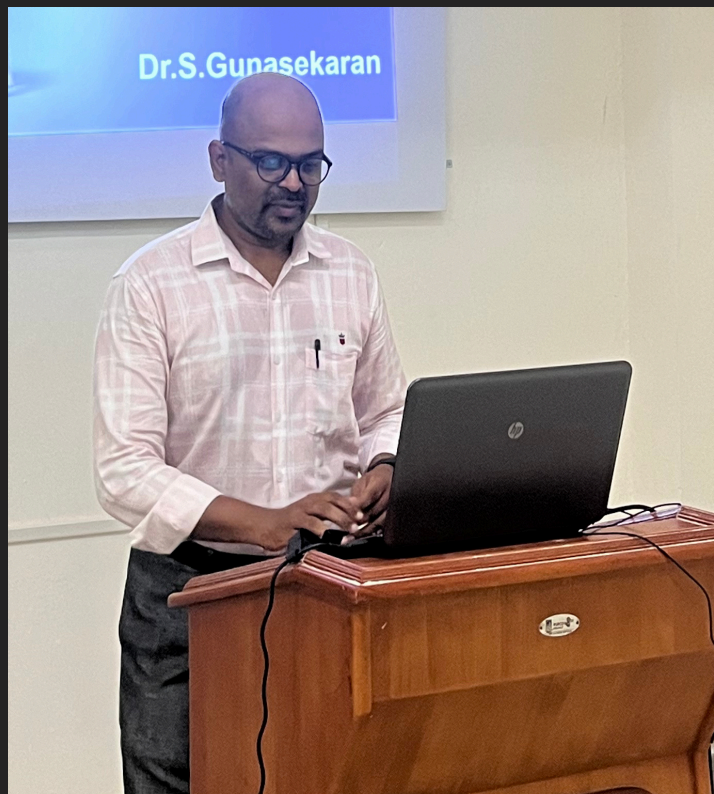
Microprocessor Workshop

The microprocessor workshop on July 24, 2024, introduced 65 students to the 8086 microprocessor kit, offering hands-on experience with its architecture and programming. Through clear explanations and practice sessions, participants gained a foundational understanding of the kit's functionalities, such as memory handling and basic instructions. The workshop provided practical learning to complement theoretical knowledge, encouraging students to explore microprocessor programming further. Follow-up workshops could focus on 8086 assembly programming, project-based learning, and advanced microprocessor architectures. Sharing materials from the workshop would support ongoing learning and experimentation.



Mastering Documentation with AI: Seminar

On 23rd October, Dr. S. Gunasekaran, HOD, Department of Computer Science, conducted an insightful seminar for the S7 CSE students. Held from 9:30 AM to 12:30 PM, the session focused on improving documentation techniques through AI tools and strategies. The seminar covered essential skills for organizing and presenting reports effectively, along with introducing various AI tools that can streamline documentation processes, making it a highly valuable experience for the students.



CREATIVE PARK



thatblank-canvas

Artist

Gautham Krishna

About the Painting:

A mesmerizing portrayal of actress Aishwarya Rajesh, capturing her elegance and timeless beauty in every stroke.



By

Gautham Krishna

S5 CSE

About the Painting:

A mesmerizing portrayal of actress Kalyani Priyadarshan



Artist:

Sreelakshmi Suresh

S7 CSE



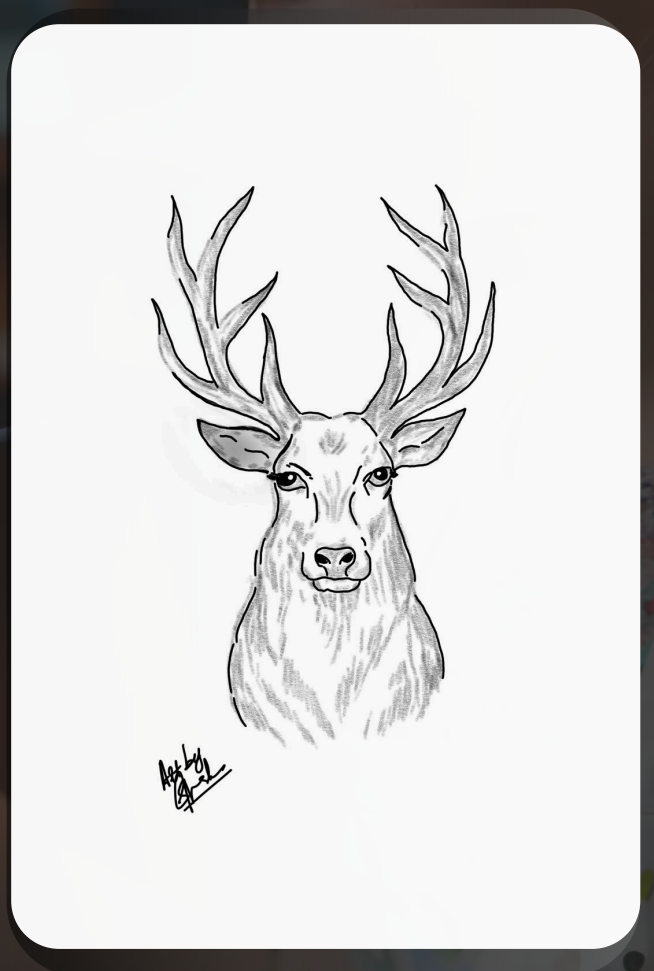
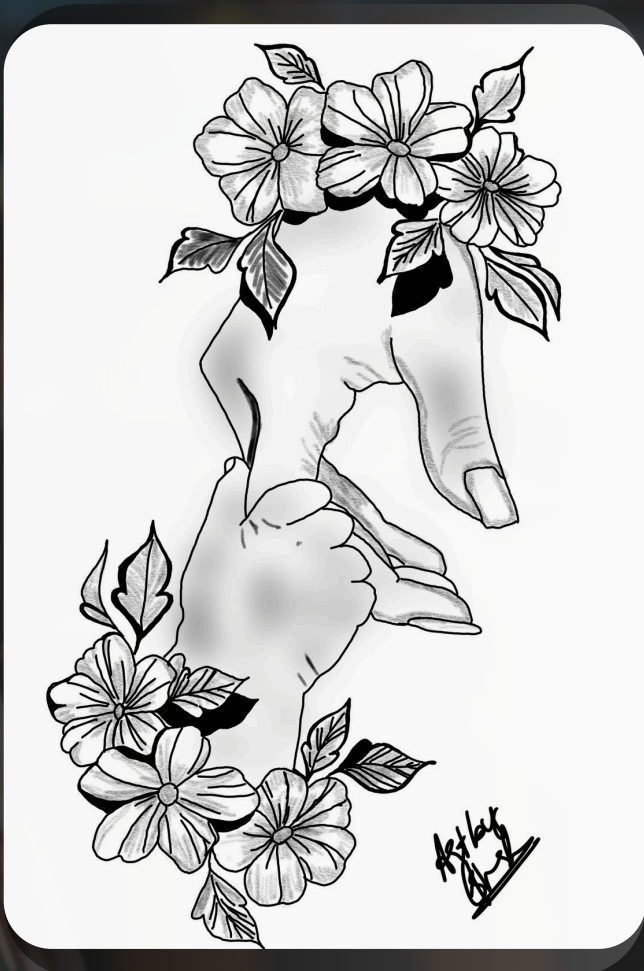
By

Gautham Krishna

S5 CSE

About the Painting:

This artwork is inspired by *Dune*, portraying two central figures reminiscent of Zendaya and Timothée Chalamet. Set against a vast desert landscape, it captures the harsh beauty of the dunes and the characters' shared sense of destiny. The rich colors and striking composition reflect themes of survival, hope, and the journey toward an uncertain future.



Artist:

Sreelakshmi Suresh

S7 CSE



By
Gautham Krishna

S5 CSE

About the Painting:

A mesmerizing portrayal of Lisa, Blackpink



Artist:

Sreelakshmi Suresh

S7 CSE



By

Gautham Krishna

S5 CSE



By
Abijith Madhav A

S7 CSE

About the Painting:

Two main anime characters Roronoa Zoro and Ryomen Sukuna



Artist

Saniya Fathima A

S3 CSE A



By

Gautham Krishna

S5 CSE



By

Saniya Fathima A

S3 CSE A

STUDENT ACHIEVEMENT

CHESS COMPETITION BY NSS UNIT



First(Boys)
Darshin R
S3-CSE A



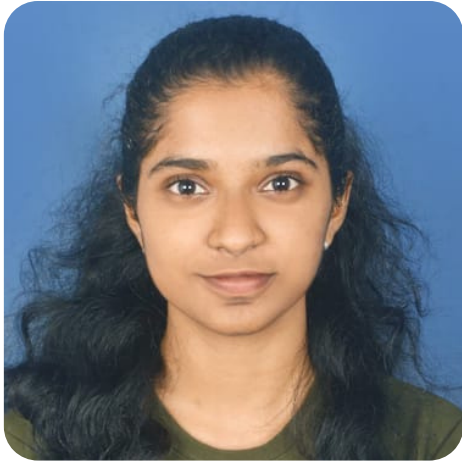
Second(Boys)
M Adharsh
S3-CSE A



First(Girls)
M Nisthula
S3-CSE A

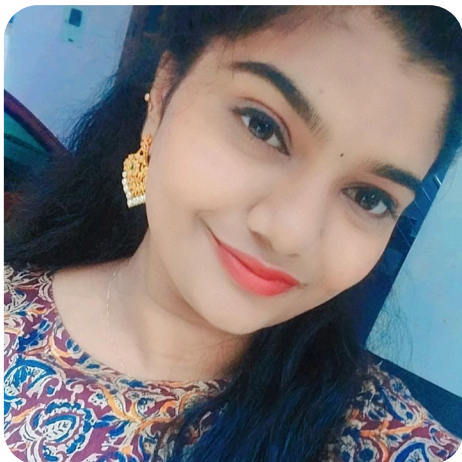


INDEPENDENCE DAY STORY WRITING COMPETITION BY NSS UNIT



**First Price
Nandana R
S3-CSE B**

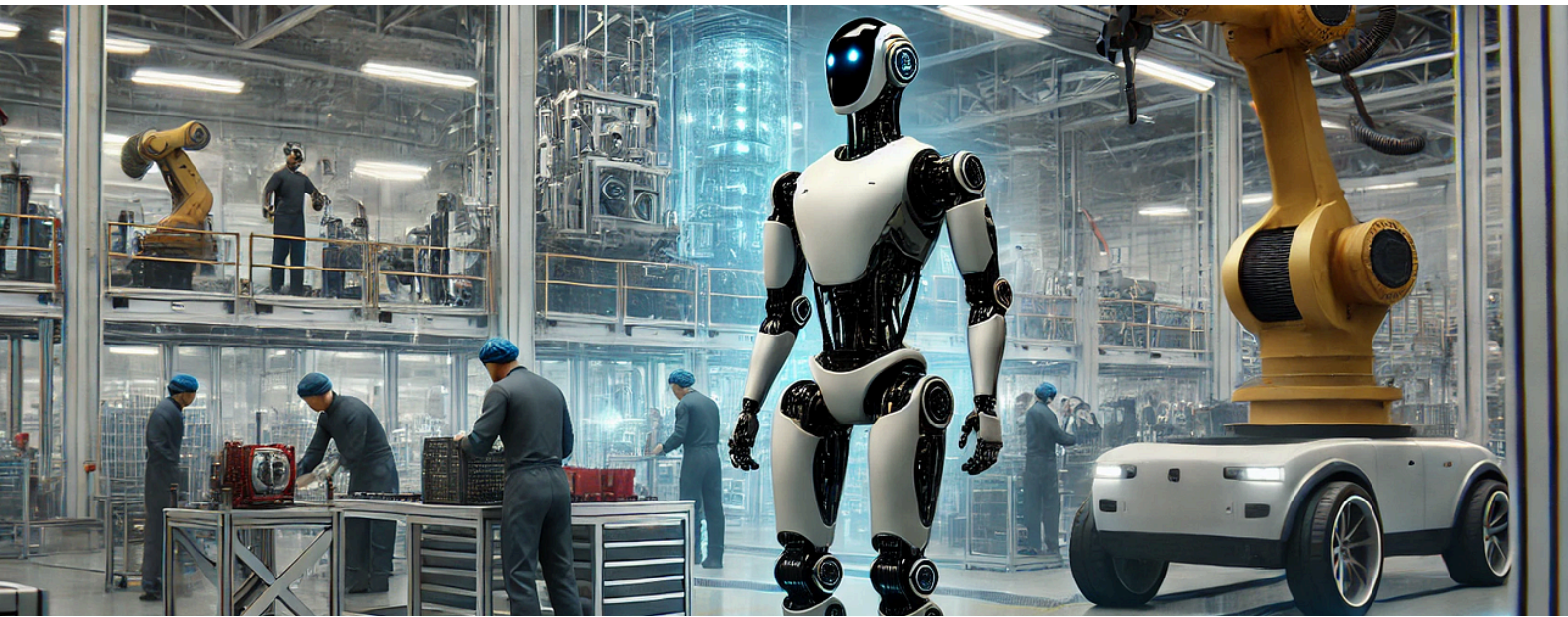
WORLD MENTAL HEALTH DAY 2024 POSTER MAKING COMPETITION



**Second Price
Dipna Sunil T
S1-CSE A**

TECH ZONE

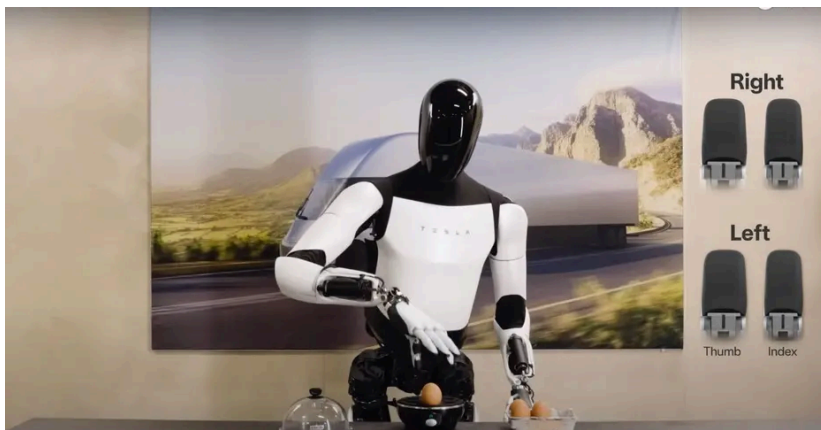
ELON MUSK-OWNED TESLA'S OPTIMUS HUMANOID ROBOT "WILL REVOLUTIONISE THE WORLD"



WHAT CAN OPTIMUS ROBOTS DO?

In a video demo displayed at the event, Optimus was also seen doing household tasks such as watering plants and picking up packages. "I think this will be the biggest product ever of any kind," Musk said.

Elon Musk on Thursday unveiled several humanoid Optimus robots at Tesla's 'We Robot' event held in California that were seen walking out, serving drinks, and handing out gift bags to the attendees. Dancing humanoid robots Optimus he said would one day be able to do menial tasks, as well as offer friendship, reported Reuters.



"The Optimus will walk among you," Musk stated, adding, "You'll be able to walk right up to them, and they will serve drinks." Optimus will be capable of walking your dog, babysitting your kids, fetching groceries, mowing your lawn, Elon Musk added.

APPLE'S M4 MACBOOK PRO MODELS, IPAD MINI, MORE TO GO OFFICIAL ON NOVEMBER 1: MARK GURMAN

APPLE'S EVENT

Apple's mega launch event for 2024 took place in September to reveal the iPhone 16 series, Apple Watch Series 10, and AirPods 4. The Cupertino-based tech giant is now expected to hold a second Fall launch event for M4-chip models of its MacBook Pro, Mac mini, and iMac later this month.

WHAT'S NEW

Mark Gurman claimed that Apple will hold a launch event around the end of October for a few products, with some launching as early as November 1. Apple is reportedly aiming to launch a 14-inch MacBook Pro with an M4 chip (code-named J604), and high-end 14-inch and 16-inch MacBook Pro models with M4 chips (J614 and J616).



NEW LAUNCHED PHONES

IQOO 13

The upcoming flagship smartphone from the Vivo subsidiary — could be launched in India by the end of the year, according to details shared by a tipster. It is expected to be unveiled in China next month, as one of the first handsets to be equipped with Qualcomm's next-generation chipset.



SAMSUNG GALAXY S25 FE

Galaxy S25 FE next year with MediaTek's latest flagship chipset, instead of using its own Exynos mobile processor. Meanwhile, a South Korean publication reports that Samsung is considering the possibility of launching the Galaxy S25 FE as a 'slim' smartphone with a slimmer but larger battery.



OPPO K12 PLUS

Snapdragon 7 Gen 3 chipset, along with up to 12GB of RAM and up to 512GB of storage. It runs on ColorOS 14, which is based on Android 14, and packs a 6,400mAh battery with support for 80W charging. The Oppo K12 Plus features a dual rear camera setup and a 16-megapixel selfie camera.

