Jun - Dec 2023

Volume 01 Issue 04

DAYANANDA SAGAR UNIVERSITY
SCHOOL OF ENGINEERING
DEPARTMENT OF CSE (AI & ML)

ML - INSIDER

Exploring the frontier of AI-ML

OFFICIAL NEWSLETTER OF
THE AI-ML DEPT.

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SCHOOL OF ENGINEERING

VISION

Transform lives through excellence in engineering education , research and innovation with an emphasis on sustainability, inclusive technologies and global needs.

MISSION

1.design and deliver contemprary engineering curricula to address regional and global needs while emphasising ethics,values,integrity and religional relevance.

2.Carry out high impact academic research, industry projects and innovation activities with active student engagement to advance science and engineering knowledge and state - of- the-art industry practices.

3.Develop regional and national leaders to advance the society and economy.

DAYANANDA SAGAR UNIVERSITY
SCHOOL OF ENGINEERING
DEPARTMENT OF CSE (AI & ML)

DEPT. OF AI & ML

VISION

To produce graduates in Computer Science and Engineering (Artificial Intelligence & Machine Learning) through excellence in education and research with an emphasis on sustainable eco-system that contributes significantly to the society.

MISSION

The Department Computer Science and Engineering (Artificial Intelligence &Machine Learning) is committed to:

1.Impart quality education through the state-of-the-art curriculum, infrastructure facilities, cutting edge technologies, sustainable learning practices and lifelong learning.

2.Collaborate with industry-academia and inculcate interdisciplinary research to transform professionals into technically competent.

3.Produce engineers and techno-entrepreneurs for global needs.

DAYANANDA SAGAR UNIVERSITY
SCHOOL OF ENGINEERING
DEPARTMENT OF CSE (AI & ML)

DEAN'S MESSAGE

Dr. Udaya Kumar Reddy K R
Dean, School of Engineering, DSU

BE YOU
BE THE DIFFERENCE!!!

I am delighted that the Artificial Intelligence and Machine learning Program, Department of Computer Science and Engineering is bringing out a newsletter that can provide beautiful insights for students and faculty fraternity. A lot has been happening in the school of computing sciences over the years and one of the significant changes involves this newsletter. our graduate students are doing amazing things in many different areas. In the current issue, you'll meet some remarkable students and faculty who are making a difference in the technical aspects and otherwise. We hope to build this endowment with your support, to afford even more opportunities for students to participate in this important component of their graduate education.
I hope this magazine provides the reader with wonderful insight and I thank the editorial team for their wonderful effort in bringing out this newsletter.

Wish you all the best.

DAYANANDA SAGAR UNIVERSITY
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DEPARTMENT OF CSE (AI & ML)

CHAIRPERSONS'S MESSAGE

Dr. Jayavrinda Vrindavanam V
Professor & Chairperson, AI and ML
SOE, DSU

It is with great pleasure that I am writing this message for Volume-1 Issue 04 of the Artificial Intelligence and Machine Learning Program Newsletter for the academic year 2022-2023. Apart from supporting the dissemination of the Departmental initiatives, the newsletters encourage the students to actively contribute and also support in dissemination of their ideas and activities. The contemporary academic world offers tremendous opportunities for exploration, experimentation and collaboration through the joint initiatives of faculties and students. The forums like newsletters provide a visible platform to reach out the on-going activities to wider audiences, especially students. The newsletter also provides a platform to disseminate emerging focus areas and functions as a medium to display expressions. I am sure that the activities organized by the student clubs, competitive forums, and students' extra-curricular and co-curricular initiatives will now receive an added impetus with the introduction of this newsletter.

The CSE(AIML) as hitherto, has been offering a dynamic activity-oriented learning environment to the students backed by our highly qualified and experienced faculties. I am sure that, these activities will be disseminated through such newsletters.

Best wishes.

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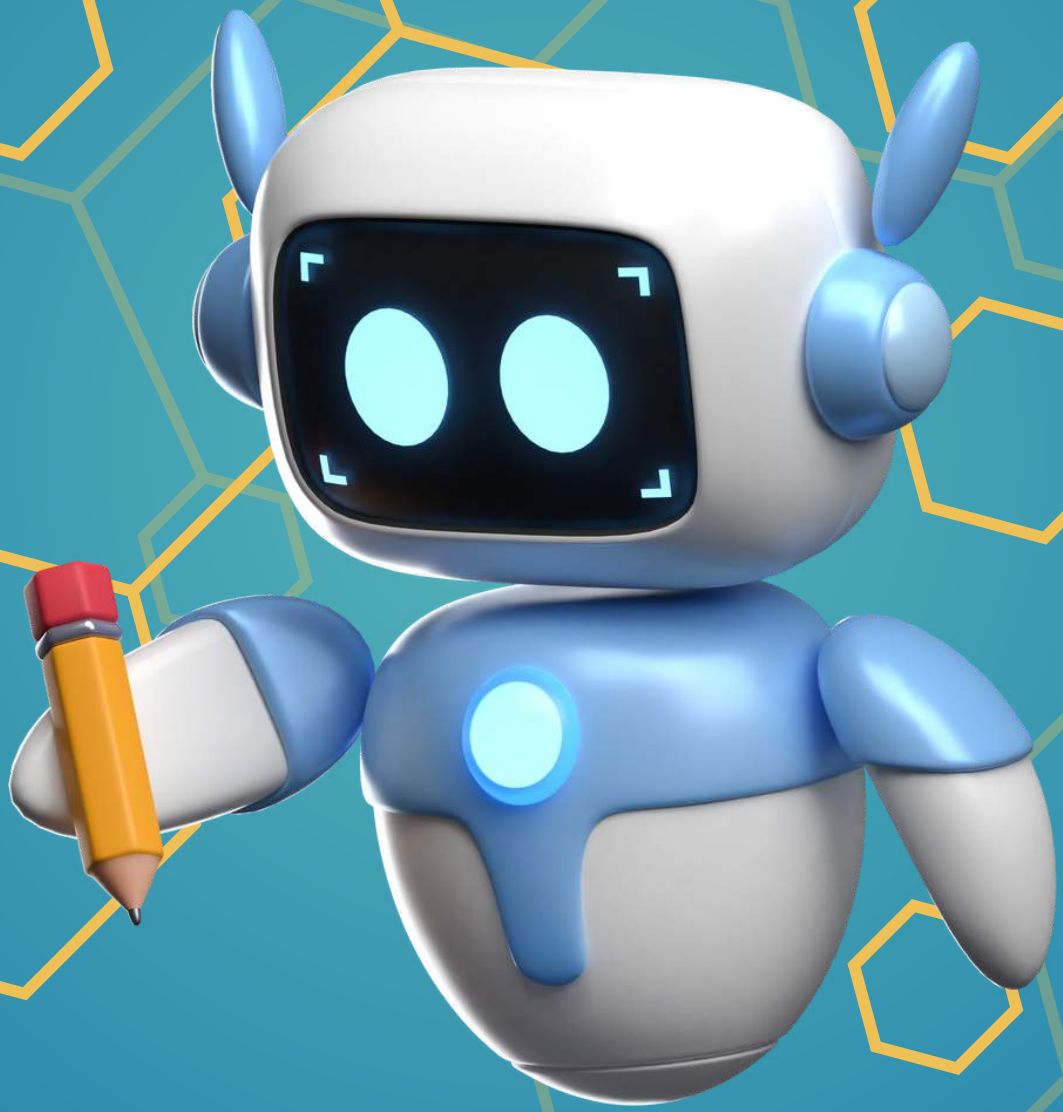
DEPARTMENT



Articles

A dive into futuristic journey

Accelerate Your Journey to AI Success with MLOps and AutoML

Artificial Intelligence (AI) and Machine Learning (ML) play pivotal roles in facilitating informed, data-driven business decisions for organizations, serving as indispensable elements that enable enterprises to excel within an era characterized by digital transformation. Although the annual investments in corporate AI have witnessed substantial growth since 2019, many organizations still encounter obstacles when endeavoring to embrace AI effectively. The journey along the AI and analytics maturity curve varies across organizations, with each progressing at its own pace.

To tackle these challenges, the integration of innovative methodologies such as Machine Learning Operations (MLOps) and Automatic Machine Learning (AutoML) emerges as a fundamental cornerstone. These methodologies form the bedrock of tools and processes that empower organizations to explore, experiment, and deploy models with a velocity and scalability characteristic of a highly efficient, AI-centric enterprise. MLOps and AutoML represent distinct yet interrelated components within the realm of AI and ML initiatives.

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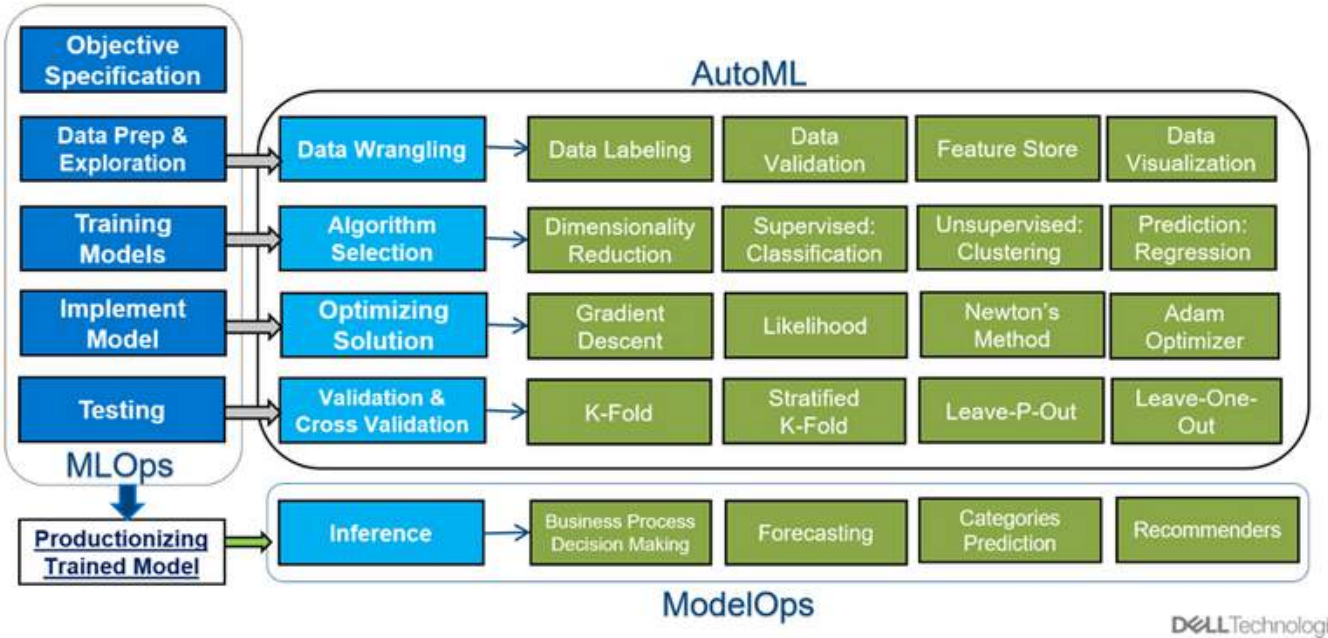
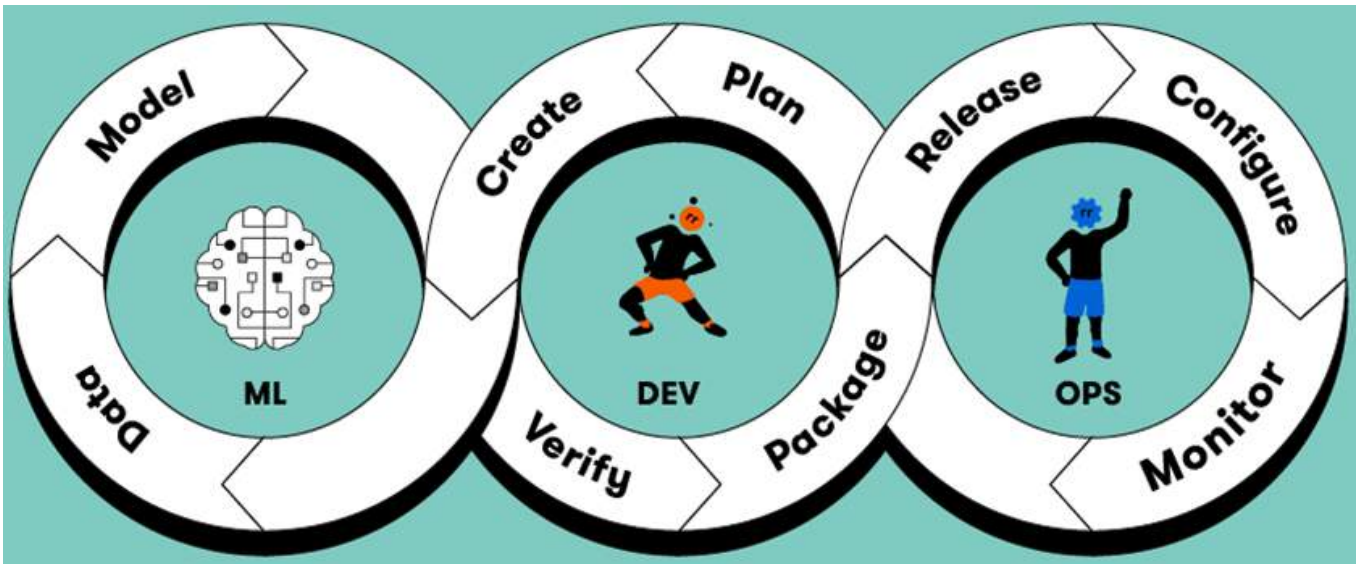


On the other hand, AutoML introduces a level of automation that simplifies and expedites the model-building process. This technology empowers organizations with varying degrees of technical expertise to create and fine-tune ML models without an exhaustive knowledge of intricate algorithms or coding. AutoML democratizes AI by making its benefits accessible to a wider array of professionals, amplifying the potential for innovation across industries.



In essence, MLOps and AutoML serve as indispensable pillars underpinning the foundation of successful AI and ML endeavors. While MLOps ensures the efficient and effective management of AI projects, AutoML democratizes the development process, enabling organizations to harness the power of AI without being hindered by technical complexities. By embracing these methodologies, organizations can overcome adoption barriers, expedite their journey along the AI and analytics maturity curve, and ultimately thrive in a digital landscape where intelligent, data-driven decisions hold the key to sustained success.

Prof. Pradeep Kumar K
Assistant Professor

5 New DevOps Tools Expected to Make a Huge Impact in 2023

1. Databricks

Databricks is a powerful data processing and analytics platform designed for the cloud. DevOps teams with large data sets can leverage Databricks to quickly and efficiently process and analyze their data. With Databricks, you can quickly build and manage data pipelines, perform ad-hoc data analysis, and build machine learning models using popular frameworks like TensorFlow and PyTorch.

2. Spinnaker

Spinnaker is an open-source, multi-cloud continuous delivery platform that simplifies the deployment and management of applications across multiple cloud platforms. With Spinnaker, you can automate your application deployment process, reducing the risk of errors and improving efficiency.

3. Grafana

Grafana is a powerful open-source platform for data visualization and analytics. It enables users to create beautiful, interactive dashboards that provide real-time insights into their data. Grafana is an ideal tool for DevOps teams that must monitor and analyze their infrastructure and applications.

4. ArgoCD

ArgoCD is an open-source, declarative continuous delivery tool designed to make deploying and managing applications in Kubernetes clusters easy. With ArgoCD, you can automate your application deployment process, reducing the risk of errors and improving efficiency.

5. Pulumi

Pulumi is a robust infrastructure as code (IaC) platform that enables DevOps teams to easily create and manage cloud infrastructure using their preferred programming languages like Python, JavaScript, and Go. With Pulumi, you can create, deploy, and manage infrastructure as code using a simple, intuitive programming model.

Prof. Jeevaraj R
Assistant Professor

Edge AI vs. Cloud AI

Artificial Intelligence has revolutionized the way we process and analyze data, enabling remarkable advancements across industries. Two prominent strategies for AI deployment have emerged: Edge AI and Cloud AI. Each approach has its merits and is suited for specific use cases, and understanding their differences is crucial in making informed decisions for AI implementation.

Edge AI:

Edge AI involves deploying AI algorithms directly on edge devices, such as smartphones, IoT devices, and cameras. The processing and analysis occur locally, closer to the data source, rather than relying on remote cloud servers.

Edge AI involves deploying AI algorithms directly on edge devices, such as smartphones, IoT devices, and cameras. The processing and analysis occur locally, closer to the data source, rather than relying on remote cloud servers. This approach offers several advantages:

Low Latency: Edge AI excels in scenarios where real-time decision-making is essential, like autonomous vehicles or real-time monitoring, as processing happens instantly on the device.

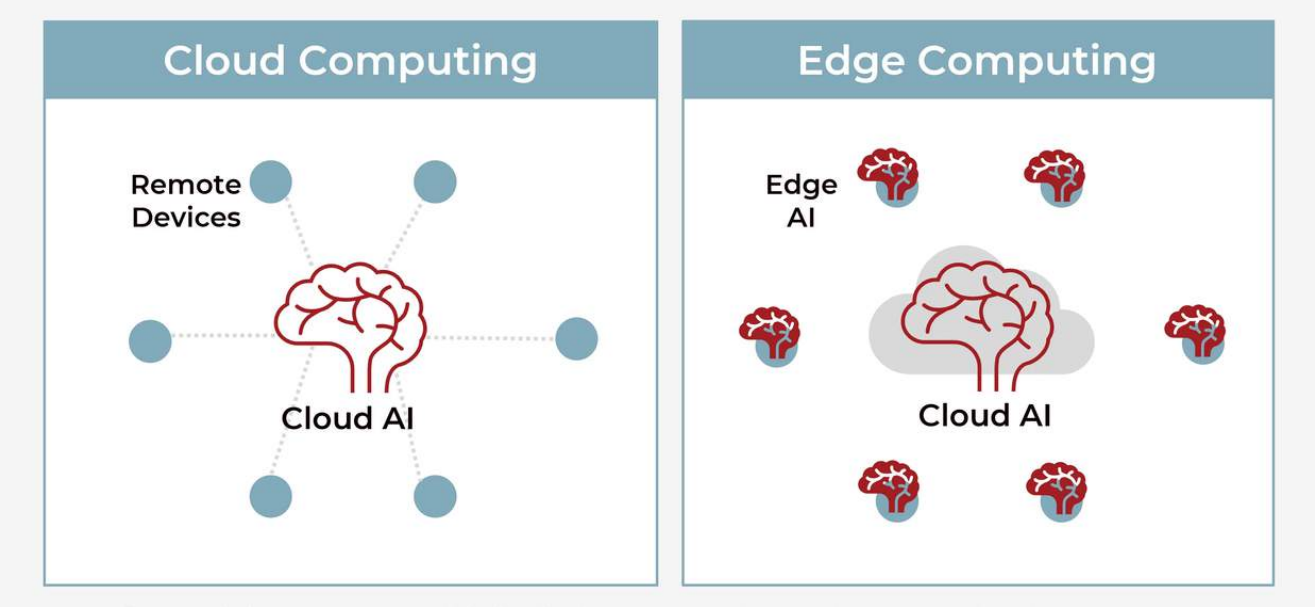
Privacy and Security: Data remains localized, reducing the risk of data breaches during transmission. This is particularly important for sensitive information.

Cloud AI: Power and Collaboration

Cloud AI involves processing and analyzing data on remote cloud servers. It offers its own set of advantages:

Scalability: Cloud AI can handle vast amounts of data and perform complex computations, making it suitable for applications that require significant computational resources.

Resource-Intensive Tasks: AI models that demand substantial computing power can be efficiently executed on powerful cloud servers.



Choosing the Right Approach:

The decision to use Edge AI or Cloud AI depends on your specific use case:

Choose Edge AI If we require low latency, privacy, offline functionality, and efficient use of bandwidth. Edge AI is ideal for applications where real-time processing and immediate decision-making are paramount.

Choose Cloud AI: If we need scalability, substantial computing power, and centralized updates. Cloud AI is suitable for resource-intensive tasks and scenarios where collaboration and centralized data processing are critical.

In many cases, a hybrid approach that combines Edge AI and Cloud AI may provide the best of both worlds. For instance, processing may start at the edge for real-time decisions, and then select data can be sent to the cloud for deeper analysis and long-term insights.

In conclusion, Edge AI and Cloud AI are complementary strategies, each excelling in different domains. Understanding our specific needs and constraints will guide us toward the optimal AI deployment strategy, paving the way for smarter, more efficient systems tailored to your requirements.

Prof. J Rajalekshmi
Assistant Professor

SECURITY, PRIVACY, TRUST, OTHER ISSUES IN INDUSTRIES 4.0

In today's world scenario, digitalization has reached a higher level. In the earlier era, only the mobile and the computer were connected to the internet but now advent new technology has been developed like surveillance cameras, biometric devices, automated vehicles, robots' smart things, etc. Nearly a billion devices are connected to the internet and by the year 2025, more than 50 billion devices will be connected to the internet. In this situation, security is the most concerning topic whether the connected devices are safe or being attacked by unauthorized users.

Industry 4.0 fosters significant improvements to data exchange and industrial control in the manufacturing industry, as embodied in so-called "smart factories." Manufacturing businesses need to make sure that IP assets, such as technical documentation and design files, are managed securely in addition to guaranteeing that the responsibilities are completed. The Internet of Things is a future-facing development of the Internet, where objects communicate with each other. IoT devices will use sensor-based technologies and it transmits the data from one device to another device or server. The gathered data is stored either in a cloud-based warehouse or a data warehouse. The challenges arise in the security of the gathered data, it should not be used by unauthorized or intruders. The resilience of production processes strongly depends on the manufacturing companies' awareness of the current threat landscape and the employed security framework for protecting against attacks.

Integration of Modern Technologies:
The goal is to enable autonomous decision-making processes, equally real-time connected value creation networks, and real-time asset and process monitoring through early stakeholder involvement, vertical and horizontal integration, and real-time asset and process monitoring. Industry 4.0 is a concept, policy, and vision that is active, with definitions, reference architectures, and standardization all in transition.

The end-to-end digital supply chain, suppliers, and the origins of the materials and components required for different types of smart manufacturing, as well as the end consumer, who serves as the destination of all manufacturing and production regardless of the number of intermediary steps and players, are all crucial to understanding Industry 4.0. It is feasible to completely integrate the full value chain, from design to realization, while optimizing with a continuous flow of data, by fusing the physical and digital worlds. A truly digital enterprise may take advantage of the unbounded power of data by getting insightful knowledge that helps them make quick, confident decisions as well as best-in-class products through effective manufacturing.

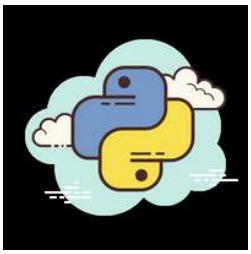
Industry 4.0 Transformation

Globalization and Emerging Issues

Corporate globalization strategies are a key element of GPNs. In this context, globalization strategies as actions within GPNs that involve outsourcing, insourcing, offshoring, and re-shoring. The terms "outsourcing" and "insourcing" relate to between the business and outside stakeholders, a change of ownership and management of activities. In order to confront the future in a positive and cooperative manner, it is essential to concentrate on the implications of the current transformation in the economic, social, geopolitical, and environmental contexts. We are living through the so-called Fourth Industrial Revolution, which is being fueled by new, cutting-edge technology. This revolution sees the convergence of the physical and digital worlds with inventions that are unprecedented in the history of civilization. But what precisely do we mean when we discuss new digital technologies that will contribute to Industry 4.0?

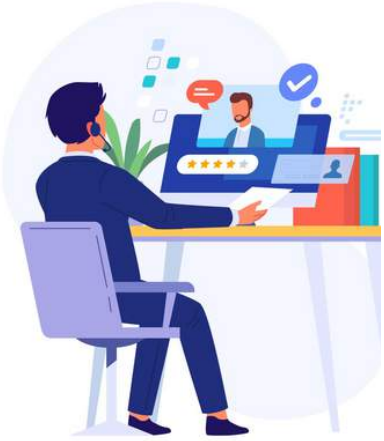
Dr. Monika Goyal
Assistant Professor

Revolutionizing HR with the Magic of Generative AI: A Glimpse into Tomorrow's Recruitment Landscape



In my exploration of the dynamic realm of Artificial Intelligence, I stumbled upon the remarkablepotential of Generative AI in the field of Human Resources. This transformative technology has ignitedmy curiosity, offering possibilities to reshape the HR landscape. As I delve further into this innovativedomain, I am intrigued by the seamless fusion of Generative AI with HR practices, a fusion that isrevolutionizing recruitment and introducing a new era of talent acquisition.

Generative AI, a specialized branch of Artificial Intelligence centered on content creation, imagery, andscenario generation, is emerging as a pivotal force in the HR sector. With its immense creative scope andadaptable nature, Generative AI stands to redefine how organizations identify and engage potentialcandidates. Drawing on my extensive experience with Python's Flask framework, which I leveraged tocraft 22 web applications, I'm struck by the synergies between these technologies.Generative AI, aspecialized branch of Artificial Intelligence centered on content creation, imagery, and scenariogeneration, is emerging as a pivotal force in the HR sector. With its immense creative scope andadaptable nature,



Integrating Generative AI into HR practices has unveiled anarray of benefits. Similar to Flask's aptitude for scaling webapplications, Generative AI amplifies recruitment endeavors.Its expertise in handling extensive datasets accelerates theidentification of potential candidates, effectively shorteningthe time-to-hire period. Additionally, by generating intelligentinterview questions that adapt based on candidate responses,the interview process gains efficiency and depth.

Much like Flask's adaptability and scalability, Generative AI'sdynamic character empowers HR teams to cater to diverseroles and industries. Whether crafting bespoke skillassessments or predicting cultural alignment, this technologyensures shortlisted candidates possess not just the requisiteskills but also resonate with organizational values.

Anuj Dwivedi
Student - AI & ML

Unleashing Creativity with Adobe's Generative AI

Recently, I stumbled upon a digital oasis that forever changed the landscape of creativity. It all began with a casual browsing session, as I was seeking inspiration for my next design project. Little did I know that this virtual rabbit hole would lead me to an awe-inspiring encounter with Adobe's Generative AI.
As I clicked on a mesmerizing piece of artwork, a notification popped up on my screen, inviting me to explore Adobe's latest AI-driven innovation. Skeptical yet intrigued, I accepted the invitation and found myself immersed in a world of boundless possibilities.

The Generative AI from Adobe was a marvel of technology that harnessed the power of artificial intelligence to transform the way artists, designers, and creators brought their visions to life. It was a sophisticated neural network capable of generating images, videos, and even music, pushing the boundaries of human creativity beyond imagination.

Curious, I decided to put the AI to the test. I uploaded a few of my own sketches and watched in awe as the AI analyzed and understood the essence of my art style. Within seconds, it produced a collection of inspired variations, each retaining my artistic touch while injecting fresh perspectives I never thought possible. My creativity soared as I explored these AI-generated masterpieces, sparking new ideas and artistic avenues I had never considered before.

What was most remarkable about Adobe's Generative AI was its ability to learn and adapt. The more artists used it, the more refined and perceptive it became. It studied the intricacies of each artist's unique style, evolving into an even more potent tool for creative expression. Far from replacing human creativity, the AI acted as a catalyst, sparking a new Renaissance, where artists and machines collaborated harmoniously to redefine the boundaries of the possible.

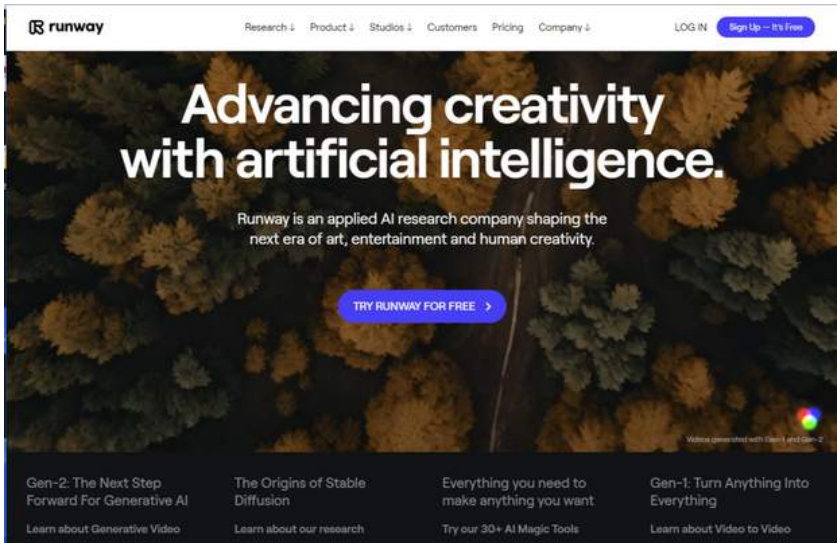
The future of Generative AI from Adobe seemed limitless. As the technology advanced, it found applications beyond the realm of art and design. From aiding in architecture and urban planning to revolutionizing personalized advertising, the potential for AI-driven creativity was vast and transformative. It even found use in education, helping students unleash their creative potential and providing new perspectives on historical and cultural masterpieces.

Reflecting on my journey, I marveled at how a simple click had introduced me to the marvels of Generative AI from Adobe. As I looked back at my own growth as an artist, I realized that the technology had not only expanded my creative horizons but also deepened my appreciation for the power of human imagination.
Adobe's Generative AI is a testament to the harmonious relationship between humans and technology. Rather than fearing the rise of AI, we embraced it as a valuable ally in our quest for innovation and creativity. Together, we ushered in a new era of unbridled imagination, where the only limits were those we dared to dream.

Harsh Manalel
Student - AI & ML

RUNWAY AI tool for FILM MAKERS

Beyond its rich feature set, Runway AI finds applications across various domains, from editing YouTube or TikTok videos with ease to enhancing social media posts and even creating personalized avatars. The platform's versatility extends to generating video subtitles, eliminating silences, and enhancing audio quality, thereby improving video accessibility.



What sets Runway apart is its ability to learn and adapt, a trait akin to a seasoned creative companion. The more it's utilized, the more refined and perceptive it becomes, acting as a catalyst for creative expression rather than a replacement for human ingenuity.

As a fan of 'Everything Everywhere All At Once,'(seven Oscars at the 2023 Academy Awards, including Best Film Editing), discovering that Runway's AI tools played a role in bringing the film's captivating scenes to life was truly exhilarating. Knowing that cutting-edge technology like Runway contributed to the creative process behind one of my favourite movies adds an extra layer of excitement to the viewing experience.

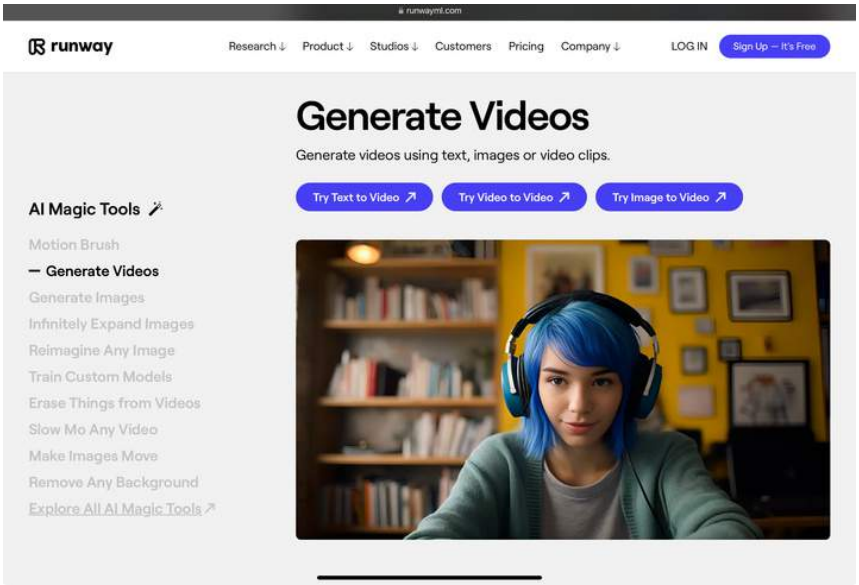
Dhruti Purushotham
Student - AI & ML

RUNWAY AI tool for FILM MAKERS

Exciting news on the filmmaking front – I've recently co-founded a dynamic Filmmaking Club at DSU. Our mission is simple but powerful – making filmmaking an art accessible to everyone. We believe that you don't need an arsenal of equipment to tell compelling stories; all you need is the passion to create. Recently, as I delved into ideas for our next workshop, being an AIML student, the idea of incorporating artificial intelligence (AI) into our filmmaking journey sparked my interest. The prospect of leveraging AI tools to enhance our club's offerings and empower our members was exciting. This led me to discover a remarkable tool – Runway, a platform that seamlessly integrates AI to amplify creative possibilities in filmmaking.

Imagine having a creative genie that brings your ideas to life. That's Runway AI for you – your filmmaking sidekick with a dash of artificial intelligence magic. It's not just a tool; it's your companion in the world of storytelling. It seamlessly blends machine learning with art and design, presenting users with over 30 creative tools powered by AI. The platform's intuitive interface and extensive features empower users to effortlessly enhance their videos and images with diverse effects, filters, and overlays. From text-to-video creation to generating unique images using text prompts, Runway AI sparks creativity in countless ways.

One of the standout features is its capacity to train custom AI models, allowing users to develop personalized models for content generation, task execution, and style bias. This feature positions Runway AI not just as a tool but as a collaborative partner in the creative process, adapting and refining with each use.



ARTIFICIAL INTELLIGENCE

Sailing Into the Future: AI Lifeguards on Duty

RAKSHIT K

ENG22AM0046

IMG SOURCE: designboom.com

Introduction

In the ever-evolving landscape of beach safety, a revolutionary shift is underway with the introduction of AI-powered sailing bots. These autonomous vessels, equipped with state-of-the-art artificial intelligence, are poised to redefine the role of traditional lifeguards. Beyond human limitations, these sailing bots navigate the expansive ocean autonomously, leveraging advanced sensors, cameras, and communication systems.

Rapid response, precise surveillance, and strategic payload delivery are the hallmark features of these AI lifeguards. By analyzing data from diverse sources such as satellite imagery and ocean currents, they enhance search and rescue operations, offering an unprecedented level of efficiency. The advantages are manifold – from continuous surveillance to adaptive navigation in dynamic environments, these bots excel in mitigating risks and ensuring timely intervention during emergencies.

Crucially, the integration of AI doesn't replace human lifeguards but complements their efforts. This collaboration presents a synergy of technology and human expertise, where AI handles routine tasks, allowing human responders to focus on complex decision-making and communication with beachgoers.

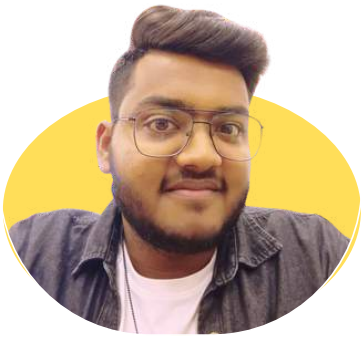
As these AI lifeguards embark on the shores, they signify not just a technological evolution but a transformative force in beach safety. In their autonomous patrols, they herald a future where artificial intelligence plays a pivotal role in safeguarding lives along our coastlines, ensuring a safer and more efficient maritime experience.

Rakshit K
Student - AI & ML

Hanu-bot

The ultimate shadow

The elemental development of an object/human following robot was our vision to start our venture towards success. We developed Hanu-Bot, an advanced object/human following rover robot during our first semester with the knowledge we acquired in our advent phase. We carried out extensive studies on the microcontroller suitable and the sensor system to be utilized in the system. We used the ATMEL ATMEGA 328P IC microcontroller impressed by its simplicity in implementation and ability to command control with the feedback sensory system. We used Arduino IDE (AIDE), an Independent environment to program our microcontroller. The bot chassis was aluminium crafted by laser cutting with our preferred agile design. The sensor system consists of an HC-SR04 Ultrasonic sensor for target body distance determination and two Infrared sensors with IC LM393 Comparator for robot steering with the angle turn of the body. The bot uses a 4-channeled relay in the control system acting as a driver for the driving and the steering motors. We focussed on integrating all these essential elements with hierarchy and came up with the upholding physical rover. We undertook multiple tests with the bot to increase the accuracy in steering and agile mobility in order to make the robot an astute model. We improved the robot's efficiency with a major number of module calibrations according to the intensity of the system's surrounding light, and placement of components on the chassis to obtain the best Centre of Gravity (COG) of the system for better mobility. We faced a great number of challenges while stepping into each phase of development of the robot. Since the IC of the microcontroller is very sensitive as mentioned even for a small short or fluctuation of current supplied, we had several IC failures which affected the built budget of the complete robot. Sensor calibration was the part that we spent most of our time on as we had to calibrate the modules every time we changed the robot terrain and the surrounding light intensity there. Battery discharge and recharge was also a time-consuming process since we had faster battery discharge due to the frequent switching of the relay for steering and movement. Facing all these challenges we implemented our first robot to the ground. We got great reviews, suggestions and applause from faculties and students of diverse departments. We had a great number of takeaway lessons and acquired more knowledge on our worked domains. We are grateful to start our venture in the field of technology with Hanu-Bot and we still hope for advancing it in future.



Akshat Agarwal
Student - AI & ML

The Algorithmic Advantage: The Thrilling Impact of AI and Cutting-Edge Tech in Finance

As a finance enthusiast juggling classes and the wild ride of running Murthy Capital Ventures (MCV), I've got a unique perspective on the intersection of academia and the Indian markets. Today, I want to share our secret weapon: how we're harnessing the power of Artificial Intelligence (AI) to optimize our trading strategies and navigate the ever-shifting landscape of India's financial terrain.

Forget the screaming brokers and frantic finger-tapping of old. AI has injected a dose of cool, calculated precision into our game. Here's how:

1. **Supercharged Market Analysis:** No more poring over endless charts and newsfeeds. AI algorithms gobble up mountains of data, from historical trends to real-time sentiment analysis, uncovering hidden patterns and predicting market movements with uncanny accuracy. This lets us stay ahead of the curve, identifying lucrative opportunities before they bloom.

2. **Algorithmic Trading with a Scalpel:** Gone are the days of gut-wrenching intuition calls. AI-powered trading bots execute trades at lightning speed, capitalizing on fleeting market inefficiencies and capturing micro-profits that human hands simply can't reach. This relentless automation ensures disciplined execution and minimizes emotional biases, keeping our portfolio safe from impulsive maneuvers.

3.Beyond the Numbers: Sentiment and News Parsing: The market isn't just about numbers; it's a living, breathing beast driven by human emotions and news events. AI excels at reading the room, analyzing newsfeeds and social media to gauge sentiment and anticipate market reactions. This helps us identify events that might trigger sudden shifts, letting us adjust our sails before the storm hits.

4.Evolving Algorithms, Adaptive Strategies: AI isn't just a one-trick pony. Machine learning algorithms continuously learn and adapt, fine-tuning their models based on market feedback and real-time performance. This dynamic approach ensures our strategies stay constantly relevant, evolving alongside the market itself.

5. Risk Management on Steroids: The market is a fickle beast, but AI helps us tame it. By analyzing historical volatility and stress-testing portfolios against various scenarios, AI models build robust risk management frameworks. This allows us to sleep soundly knowing our investments are shielded from unexpected turbulence, while capitalizing on controlled risk-taking.

Sure, AI isn't a magic wand, and the Indian market throws its own unique curveballs. But by embracing its potential, we've seen tangible results – improved returns, tighter risk management, and a newfound confidence in navigating the market's unpredictable currents.

Think of AI as the co-pilot in our investment cockpit. It doesn't replace the human touch, but rather augments our decision-making with its razor-sharp analysis and lightning-fast execution. And believe me, in the high-stakes game of Indian finance, having that extra edge can make all the difference.

So, as you delve into the world of finance, remember this: AI isn't just a buzzword; it's a revolution taking root in the market's fertile ground. Embrace its potential, experiment, and who knows, you might just find yourself surfing the next wave of financial innovation.
Onward and upward,

Chethan K Murthy
Founder and Quant Strategist
Murthy Capital Ventures

Beyond the Stars: AI and ML in Astroinformatics & Cosmic Discoveries

As a passionate student of astroinformatics, I'm constantly awestruck by the miraculous massiveness of the universe and the relentless pursuit of knowledge that drives us to explore it. But today, I want to focus on something equally exciting: the revolutionary role of Artificial Intelligence (AI) and Machine Learning (ML) in transforming space exploration. Forget clunky robots and slow data analysis. AI and ML are reshaping the game, equipping us with powerful tools to navigate the cosmos and unlock its secrets. Let me take you on a journey through this fascinating fusion of technology and spacefaring.

AI for Smoother Satellite Missions: Imagine satellites that predict their orbits with uncanny accuracy,optimize,communication, and even troubleshoot problems autonomously. That's the magic of AI. From orbit determination to on-board decision-making, AI is making satellites smarter, leading to more efficient and successful missions.

Planetary Exploration with a Robotic Twist: Picture rovers traversing alien landscapes, charting paths, and analyzing data – all without human intervention. This is the power of AI in planetary exploration. By processing sensor data and making real-time decisions, AI-powered robots can delve deeper into unexplored territories, searching for signs of life and pushing the boundaries of our understanding.

Deep Space Adventures with Optimal Trajectory: Reaching distant reaches of the solar system requires meticulous planning. Enter AI! By crunching complex calculations and optimizing routes, AI helps us design efficient trajectories for deep space missions, saving time and resources. Whether it's visiting asteroids or sending probes to distant planets, AI is our co-pilot, charting the best course through the cosmic expanse.

The Universe Unveiled: AI as a Cosmic Interpreter: Peering into the depths of space generates mountains of data, filled with hidden patterns and secrets. This is where ML shines. Using algorithms that learn and evolve, ML can decode these cosmic messages, identifying exoplanets, unraveling the mysteries of dark matter, and even assisting in gravitational wave detection. Every blip, every anomaly, holds the potential for groundbreaking discoveries, and ML is our key to unlocking them.

But just like any great adventure, there are challenges. Computing power in space is a hurdle, and ensuring the robustness of AI systems for the harsh realities of the cosmos is crucial. Yet, as technology advances and space explorers collaborate with AI experts, these obstacles become stepping stones.

The future of space exploration is brimming with possibilities thanks to AI and ML. Imagine intelligent satellites forming a vast cosmic network, autonomous rovers discovering life on Mars, and deep space probes powered by AI, deciphering the whispers of the universe. This is not science fiction, but the thrilling reality that awaits us. So, let's embrace the power of AI, not as a replacement for human ingenuity, but as a transformative partner in our quest to understand the universe, one starlit step at a time.

Remember, this is just a starting point. You can personalize this article further by adding specific examples from research papers, mentioning prominent scientists working in this field, or even including your own hopes and aspirations for the future of AI in space exploration. Make it your own, and let your passion for the cosmos shine through!

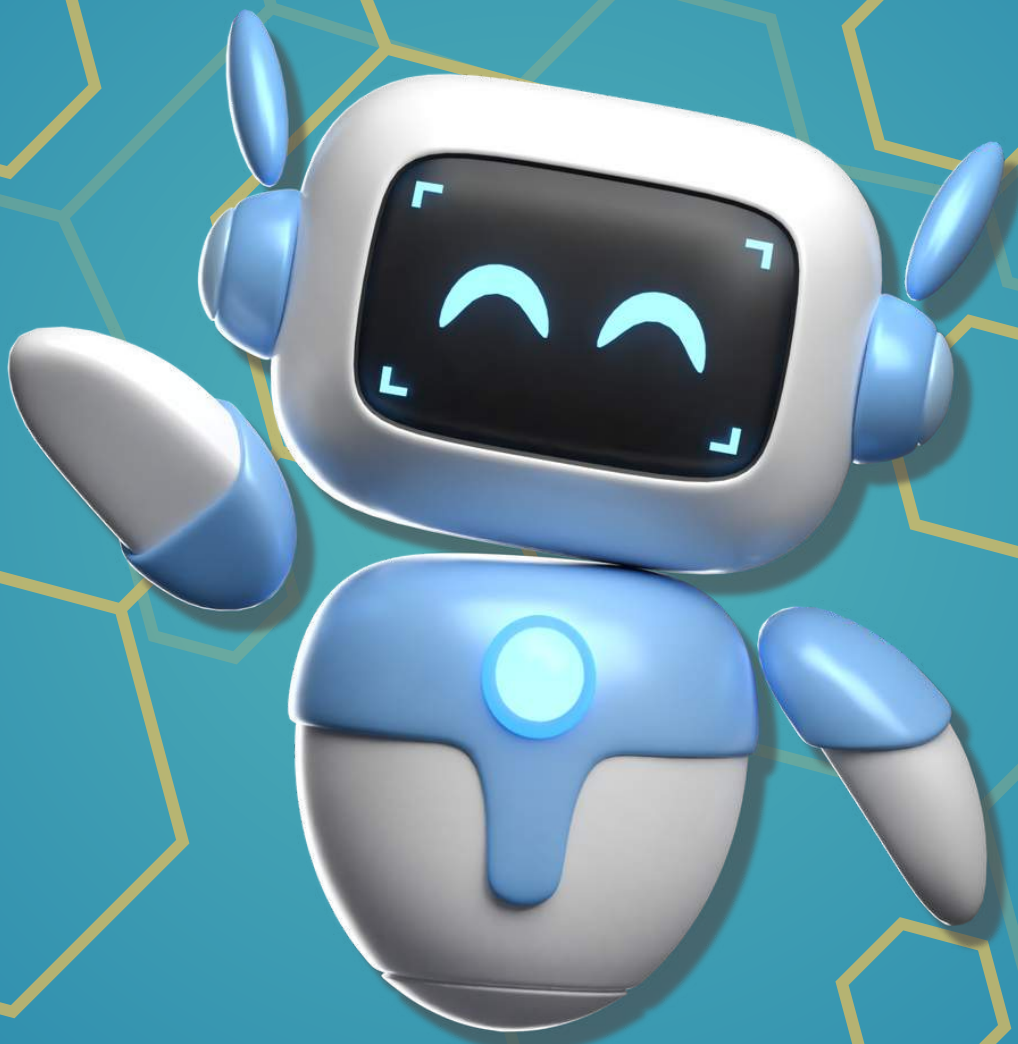
Neha Amin
Student - AI & ML

Jun - Dec 2023

Volume 01 Issue 04

DAYANANDA SAGAR UNIVERSITY
SCHOOL OF ENGINEERING
DEPARTMENT OF CSE (AI & ML)

DEPARTMENT



ACTIVITIES

A dive into futuristic journey

BOARD OF STUDIES - EXTERNAL MEMBERS

Dr. V Susheela Devi
Principal Research Scientist
Computer Science and Automation Dept., IISC, Bangalore
External Member – Academic &Research

Dr. Mayank Baranwal
Scientist, TCS Research & Innovation, & Adjunct Professor, IIT Bombay
External Member – Industry, Academic, Research & scientist

Dr. Saswati Dana
Advisory Research Engineer,AI Team
IBM Research lab India, Bangalore
External Member – Industry

Ms. Aruna Rajan
Director ML project
Google, India, Bangalore
External Member – Industry

BOS MEETING

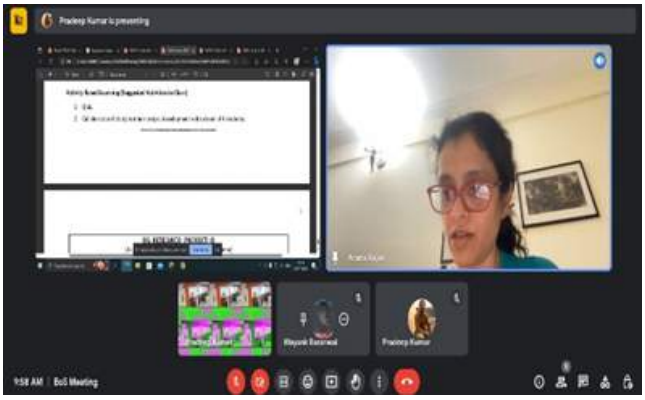
Board of Studies (BoS) meeting was organized by Department of Computer Science & engineering (Artificial Intelligence & machine Learning) on 22/07/2023 Saturday from 09.00AM to 01.00PM in Gallery Hall 2 at AIC-DSU Innovation Foundation Kudlu Main Rd, Srinivasa Nagar, Hal Layout, Singasandra, Bengaluru, Karnataka 560068.

External BoS Members listed have participated actively for giving their insights for the syllabus 2020-2024(7th & 8th Sem), 2021-2025 (5th to 8th Sem), 2022-2026 (3rd to 8th Sem).
Dr. Saswati Dana, Advisory Research Engineer, AI Team, IBM Research lab India, Bangalore, External Member – Industry, has visited DSU campus at 9.00AM.
Dr. V Susheela Devi, Principal Research Scientist, Computer Science and Automation Dept., IISC, Bangalore, External Member – Academic &Research. Ms. Aruna Rajan, Director ML project, Google, India, Bangalore, External Member – Industry. Dr. Mayank Baranwal, Scientist, TCS Research & Innovation, & Adjunct Professor, IIT Bombay, External Member – Industry, Academic, Research & scientist, attended online due to their line up busy schedule.
Dr. Jayavrinda Vrindavanam V, Professor and Chairperson CSE(AIML), SoE, DSU, Bengaluru, started the BoS Meeting with a welcome note and also added the highlights of Department during 2021-2023 (currently with 2 Year batch achievements & records).
Dr. Monika Goyal, Assistant Professor CSE(AIML), SoE, DSU, Bengaluru, briefed up the syllabus from 1st sem to 8th sem for 2020-2024 Scheme and highlighted on the detail syllabus for current academic 7th & 8th Sem.
Prof. Pradeep Kumar K, Assistant Professor CSE(AIML), SoE, DSU, Bengaluru, briefed up the syllabus from 1st sem to 8th sem for 2021-2025 Scheme and highlighted on the detail syllabus for current academic 5th & 6th Sem.
Prof. Swetha C B, Assistant Professor CSE(AIML), SoE, DSU, Bengaluru, briefed up the syllabus from 1st sem to 8th sem for 2022-2026 Scheme and highlighted on the detail syllabus for current academic 3rd & 4th Sem.
Department staff members were marked their presence during the BoS Meeting. Working lunch was provided for all the BoS members & department faculty members.

BoS meeting with External BoS members & Department Faculty members.
Comprising; Dr. Saswati Dana, Dr. V Susheela Devi, Dr. Jayavrinda Vrindavanam V, Dr. Monika Goyal, Dr. Vinutha N, Prof. Pradeep Kumar K, Prof. Swetha C B, Prof. Jeevaraj R, Prof. Mary Jasmine and Prof. Mithaguru

BOS MEETING

Department Chairperson, Dr. Jayavrinda Vrindavanam V, engaged in illuminating discussions, addressing queries with precision during the BoS meeting. With a backdrop of collaborative learning, her insights resonate within the innovation hub, guiding the course towards a dynamic future.



BoS meeting as external luminaries, including Ms. Aruna Rajan Director ML project Google, India, Bangalore shared their insights via Google Meet. Bridging distances with technology, their virtual presence enriches the discourse on syllabi development for multiple academic cycles.

Distinguished external experts, academia, and faculty converge, symbolizing a collective effort to shape AI and ML curricula. Dr. Vinutha V's closing remarks resonate, marking the end of a productive discourse that charts the academic trajectory. A visual testament to the synergy of minds fostering innovation within the realm of education."

One week Faculty Development Program "Data Analytics and Machine Intelligence for Cyber Security Threats and Challenges"

Date: 25th July to 31st July, 2023 Time: 9:00 AM – 4.30 PM

Target Audience: All the faculty members from CS cluster

The Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), Department of Computer Science and Engineering (Data Science) and the Department of Computer Science and Engineering (Cyber Security) jointly organized one week Faculty Development Programme from 25th - 31st July, 2023 on "Data Analytics and Machine Intelligence for Cyber Security Threats and Challenges". The FDP benefitted the faculty Deep Learning roles in order to tackle the Cyber Security threats and challenges. The resource persons were from reputed organizations both from Academia as well as from Industry such as TCS, Microsoft, Altimetrik, IBM, IISc, BITS Pilani, KLETECH. This FDP also encourages those faculty members who are also interested and are aspirants of pursuing Ph.D. in the same domain. Around 40+ faculties have registered and attended the FDP.

RESOURCE PERSON

Mr. Ajay Ganapule,TCS, Bangalore
Topic Taught:Introduction to Cyber Security

Ms. Moutan S, TCS, Bangalore
Topic Taught: Cyber Forensics

Dr. Gururaj N. Bhadri, KLETECH University, Hubli
Topic Taught: Statistical Analysis of Cyber Data

One week Faculty Development Program "Data Analytics and Machine Intelligence for Cyber Security Threats and Challenges"

RESOURCE PERSON

Mr. Nayan N, Altimetrik India Pvt. Ltd., Bangalore
Topic Taught:Data Science for CyberSecurity

Dr. Hemant R, BITS, Goa Campus
Topic Taught: Introducing AI for Android Malware Detection

Dr. Mohit S, Microsoft, India
Topic Taught:Introducing AI for Android Malware Detection

Ms. Pooja A, Senior researchscientist IBM
Topic Taught:Machine Intelligence for Cyber Data

Dr. Ashwini, Department of Computer Applications and Automation, IISC, BengaluruTopic
Taught:Deep Learning approaches for cyber security threats

One week Faculty Development Program "Data Analytics and Machine Intelligence for Cyber Security Threats and Challenges"

RESOURCE PERSON

Mrs. Hemavati i, Department of Computer Applications and Automation, IISC, Bengaluru
Topic Taught:Deep Learning approaches for cyber security threats

Mr. Ajay Ganapule,TCS, Bangalore
Topic Taught:Career Opportunities in CyberSecuritythreats

Mr. Anantha Ramayya,Former Professor, IISc, Bangalore
Topic Taught Universal Human Values

Organizing Committee

Dr. Vinutha N, Associate Professor, CSE (AIML)
Prof. Pradeep Kumar K, Assistant Professor, CSE (AIML)
Dr. Kakoli Bora, Associate Professor, CSE (DS)
Prof. Monish L, Assistant Professor, CSE (DS)
Prof. Naveen Kulkarni, Assistant Professor, CSE (CY)
Prof. Ranjima P, Assistant Professor, CSE (CY)

One week Faculty Development Program "Data Analytics and Machine Intelligence for Cyber Security Threats and Challenges"

The event was inaugurated by honorable Chief Guest Mr. Sreenivasa Ramanujam K, Manager, AWS Business Unit, Tata Consultancy Services (TCS), India, Dr. Amit R Bhatt, Pro-Vice Chancellor, Dayananda Sagar University (DSU), Dr. M K Banga, Dean-Research and Development, DSU, Dr. Udaya Kumar Reddy K R, Dean Academics, School of Engineering (SoE), DSU, and all the Chairmans of different departments such as Mechanical, Aerospace, Electronics, Core Computer Science and Engineering, respectively on July 25, 2023 at 9:30 AM to 11:00 AM. The inauguration session started with invocation and lighting the lamp.

The second day sessions were conducted by Dr. Gururaj N. Bhadri, KLETECH University, Hubli on Statistical Analysis of Cyber Data where he taught various statistical techniques applied on cyber data for analysis and prediction.

The third day session-1 was handled by Mr. Nayan Naidu, Head DevOps & Agile practice, Altimetrik India Pvt. Ltd., Bangalore on Data Science for Cyber Security where he spoke on various applications of Data Science in cyber security. Mr. Naidu focused on how data analytics can be used in various industries w.r.t. Cyber security.

The FDP was concluded with valedictory function in the presence of Dr. KNB Murthy, Vice Chancellor, Dayananda Sagar University (DSU), Dr. Amit R Bhatt, Pro-Vice Chancellor, Dayananda Sagar University (DSU), Dr. M K Banga, Dean-Research and Development, DSU, Dr. Udaya Kumar Reddy K R, Dean Academics, School of Engineering (SoE), DSU and the Chief Guest Mr. Anantha Ramayya, Former Professor, IISc, Bangalore. The participants were addressed by all the dignitaries and the certificates were distributed to them.

FIVE DAYS VALUE ADDED COURSE ON "FULL STACK DEVELOPMENT"

Date: 03/07/2023 to 07/07/2023 Time: 9:30 am to 04:40 pm

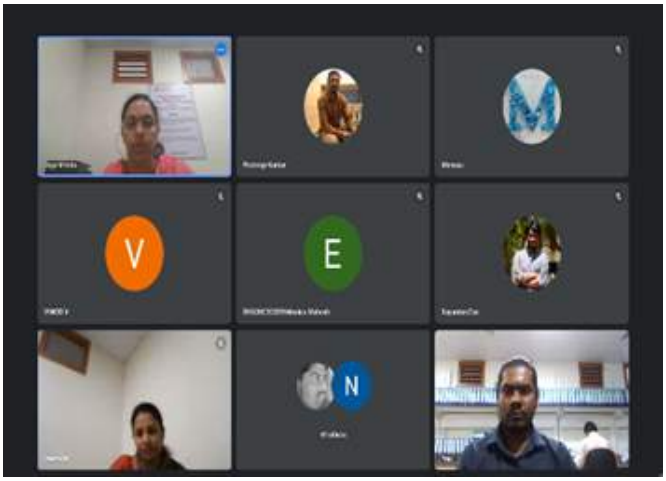
Online: Google Meet Platform

Target Audience: 6th Sem CSE Students and CSE(AI&ML) Students

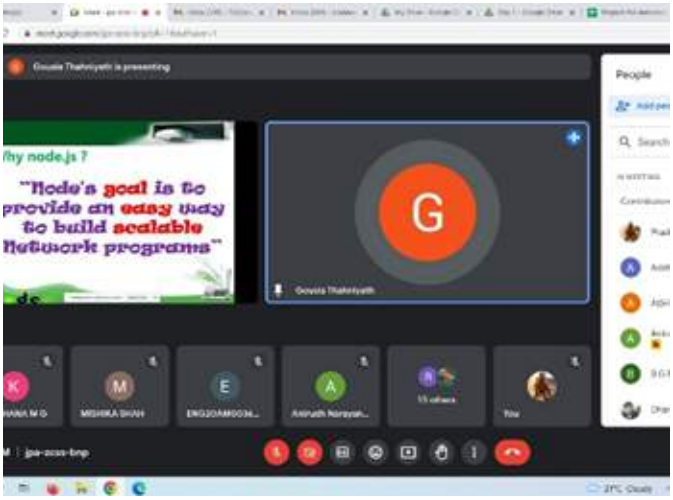
Resource Person

Dr. Gousia Thahniyath, Assistant Professor, Department of CSE
Dr. Santhosh Kumar J, Associate professor, Department of CST
Prof. Veena M, Assistant Professor, Department of CSE
Prof. Udayabhaskara N, Assistant Professor, Department of CSE(AI&ML)

The objectives of full-stack development education for students are to equip them with a comprehensive skill set encompassing front-end and back-end technologies, fostering problem-solving abilities for complex software challenges. Students will gain proficiency in various programming languages and popular web development frameworks, master database management, version control, and security principles. They will learn server-side scripting, API integration, and testing for quality assurance. Additionally, students will cultivate teamwork, communication, and project management skills, build diverse portfolios, and stay updated with industry trends. The ultimate goal is to prepare students for job readiness, entrepreneurship, and ethical coding practices while instilling a commitment to continuous learning and adaptability in the ever-evolving field of full-stack development.

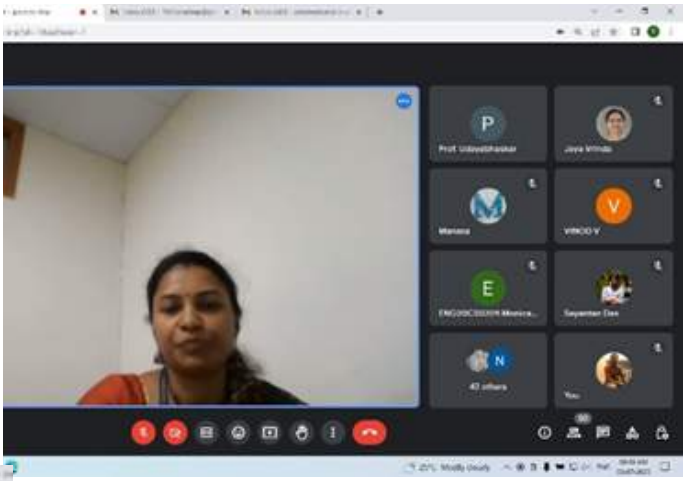


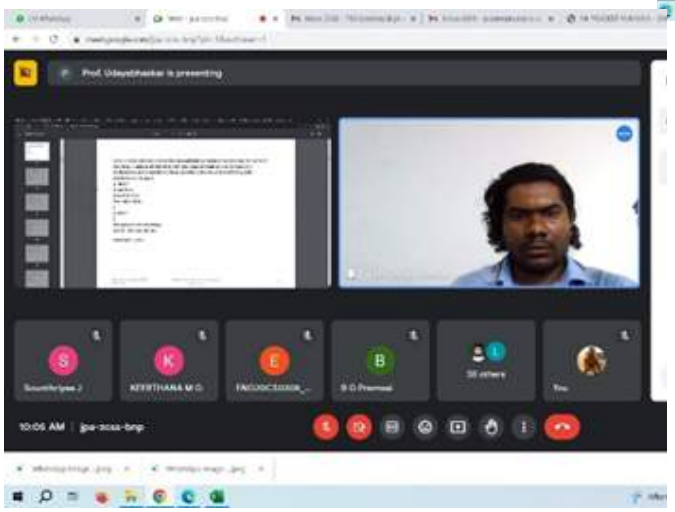
The day 1 of the programme started with the 'Introductory remarks' for the value-added course by Dr. Jayavrinda Vrindavanam, Professor and Chairperson, Department of CSE(AI&ML).



Dr. Gousia Thahniyath the morning session began with the introduction to nodeJS, different libraries of nodeJS, node package manager and filesystem. The resource person demoed the creation of server using node express and how to handle request and responses. After a short break the session resumed where the resource person explained the mangoDB and gave demonstrations of creating and linking of database with the server.

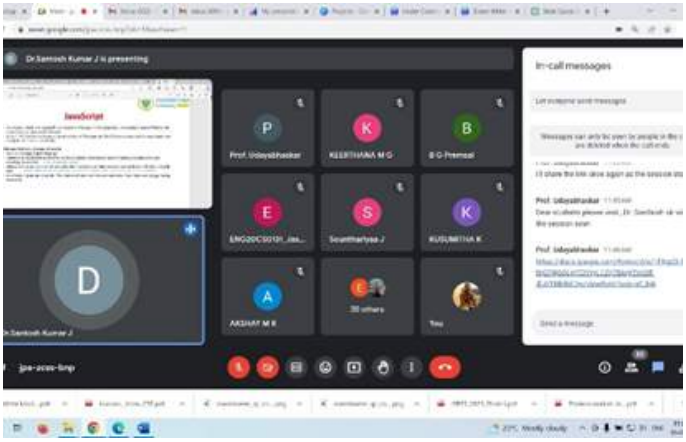
Prof. Veena M the morning session began with the lecture on various introductory topics on HTML such as 'HTML5 -Formatting and Fonts Commenting Code Anchors–Backgrounds'. The objective of these three sessions conducted on the day-1 was to make the participants to understand the basics of markup languages and various elements used in HTML





Prof. Udayabhaskara N Session began with recapping of the topics that were covered in the day 1 and with the introduction to CSS. The session covered major approaches to incorporate CSS into the html documents and various tools used in different frameworks of full stack using VScode IDE to give demonstration. It also covered UI/UX design philosophies.

Dr. Santhosh Kumar J the day 5 session included the topics such as Basics of Express, Serving Static Pages, Listing Directory Contents. After the demo of an interesting web application like "blogging app" the students were given with the task of customizing it and uploading each version to the shared drive.



Five Days Value Added Course
On
“Machine Learning Models and its Mathematical Framework "

Date: 07/08/2023 to 11/08/2023 Time: 9:30 am to 04:40 pm

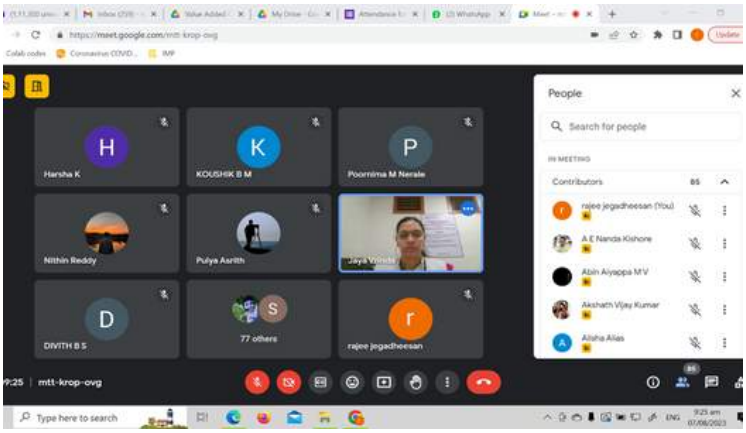
Online: Google Meet Platform

Target Audience: 5th Sem CSE(AI&ML) Students

Resource Person

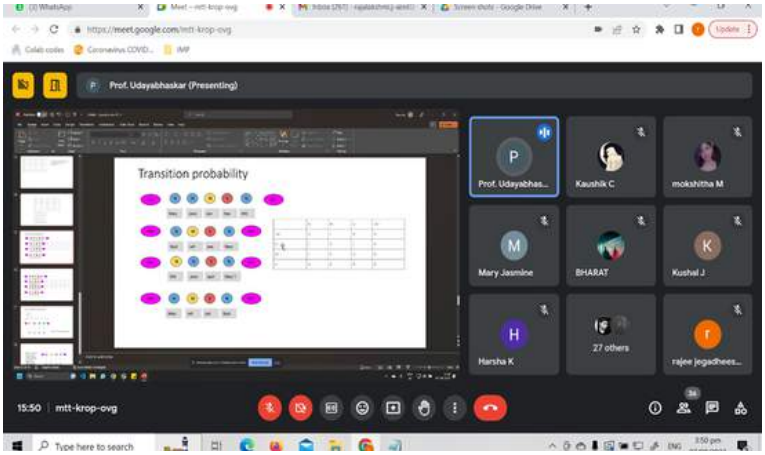
Dr. Jayavrinda Vrindavanam, Chairperson,Department of CSE(AI&ML)
Prof. Sanjeev Kumar,Professor for Practise ,Department of CSE(AI&ML)
Prof Sasikala. N,Assistant Professor,Department of CSE
Dr Revathi,Associate Professor, Department of CSE
Dr. Savitha Hiremath,Associate Professor, Department of CSE
Prof. Sharanabasappa Tadkal,Assistant Professor,Department of CSE(CY)
Prof J.Rajalekshmi,Assistant Professor,Department of CSE(AI&ML)
Prof. Udayabhaskara N, Assistant Professor, Department of CSE(AI&ML)
Prof Mary Jasmine,Assistant Professor, Department of CSE(AI&ML)
Dr Vinutha,Associate Professor, Department of CSE(AI&ML)
Dr Monika Goyal,Assistant Professor, Department of CSE(AI&ML)
Prof Ayain John,Assistant Professor, Department of CSE(AI&ML)
Prof. Pradeep Kumar,Assistant Professor, Department of CSE(AI&ML)
Prof. Aparajita Sinha,Assistant Professor, Department of CSE(AI&ML)

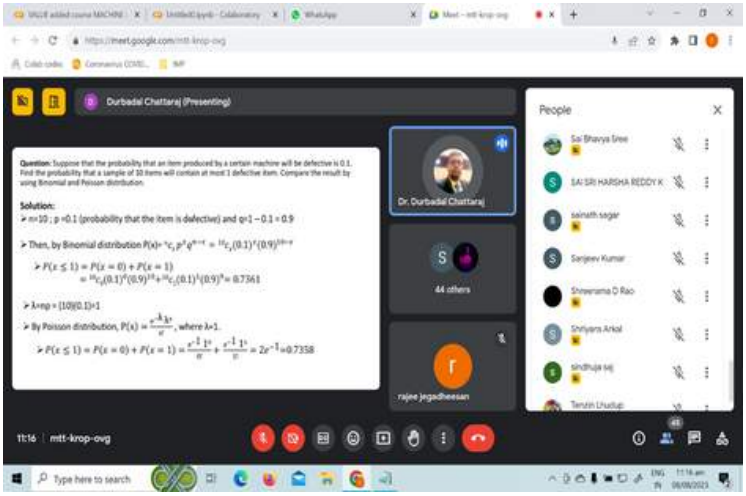
The objectives of studying machine learning models and their mathematical framework are multifaceted. Firstly, students are guided to develop a comprehensive understanding of the core mathematical principles that underpin machine learning, including linear algebra, calculus, and probability theory. This foundation empowers them to delve into various machine learning models and algorithms with confidence. Secondly, the aim is to equip students with problem-solving skills, enabling them to identify real-world challenges suitable for machine learning solutions and select the most appropriate models. Furthermore, students will gain hands-on experience in model development, optimization techniques, and statistical inference, ensuring they can build, fine-tune, and interpret machine learning models effectively. y bridging the gap between mathematical theory and practical implementation.



Dr Jayavrinda Vrindavanam introduced the concepts of machine learning. The session covered an overview of various techniques and models within the field of machine Learning. Students gained insights into the diverse applications of these models and their potential for future advancements.

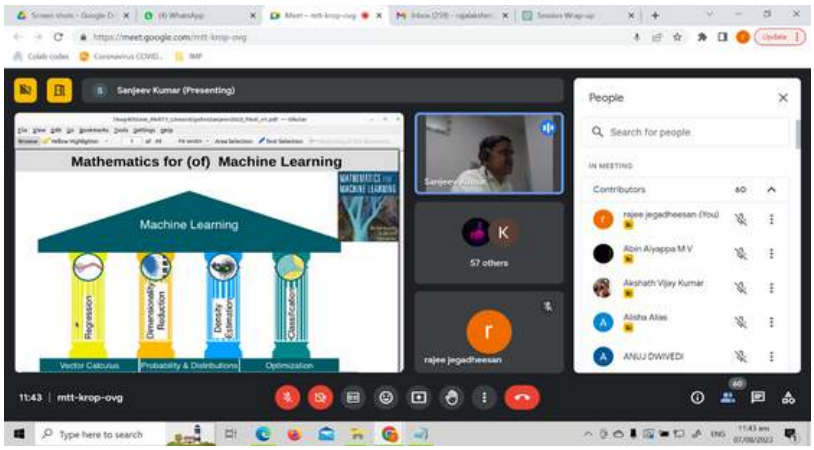
Prof Udaya Bhaskara explained the core definitions and principles behind this concept. The session featured illustrative examples of hidden Markov models, showcasing their relevance in practical scenarios. Students learned about the applications of Markov models in real-life situations, including their role in word tagging related to parts of speech.





Dr Durbadal Chattaraj session helped the students to broaden their understanding in probability notations essential for testing statistical information. The lecture covered difference between discrete and continuous probability distributions. Furthermore, students gained familiarity with different probability distribution types, including binomial, Gaussian, and normal distributions.

Prof Sanjeev Kumar sessions focused on the concept of matrix decomposition utilizing eigenvalues and eigenvectors. Moreover, the lecture explained the interdependence of eigenvectors and transpose decomposition. Additionally, the lecture explained the essential optimization principles and the fundamental concept of function derivatives.



An alumni talk
“Campus to Corporate: A talk with an Alumnus”

Date: Wednesday 09/08/2023 Time: 11:15 am to 12:45 pm

Online: Google Meet Platform

Target Audience: 5th and 7th Sem CSE(AI&ML) Students

Faculty Coordinators

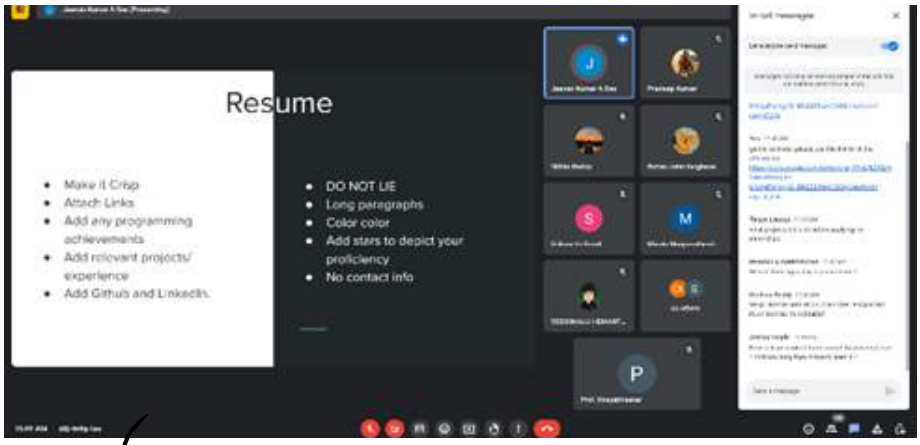
Prof. Mary Jasmine E, Assistant Professor,Department of CSE(AI&ML)

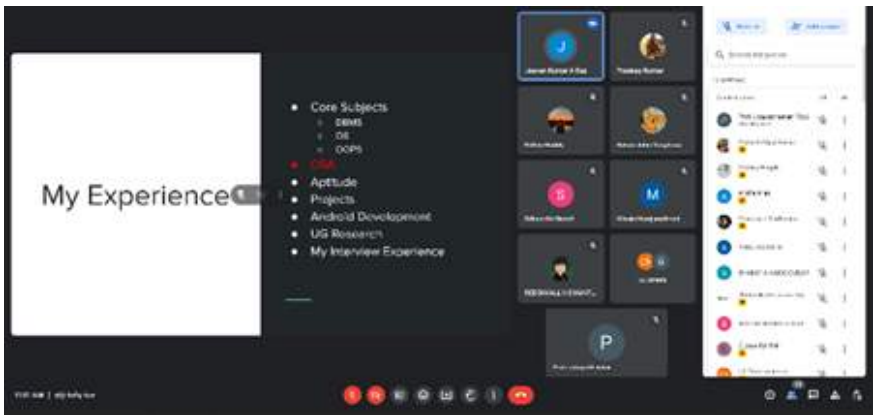
Prof. Udayabhaskara N, Assistant Professor,Department of CSE(AI&ML)

Resource Person

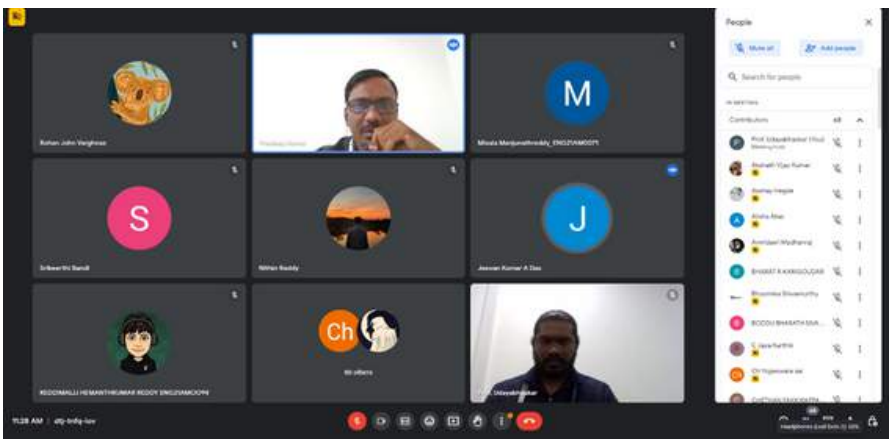
Mr. Jeevan Kumar A Das
Software Engineer, JP Morgan Chase & Co

Mr. Jeevan Kumar A Das began his talk by giving a little introduction about his workplace and the work domain. The resource person talked about the challenges he had faced during his course of time as a student and in pursuit of a job. The session was interactive with students asking doubts throughout the session along with that there was question answer session as well at the end of the talk where resource person cleared the doubts that students had, all in all it was very informative and helpful for the students with respect to their placement activity. The session was concluded with the vote of thanks by Prof. Mary Jasmine K, and the student’s feedback was collected after the session was concluded.





“Campus to Corporate: A talk with an Alumnus”



The AI and ML department organized an event by the AI Works @ DSU club and DSU X Tempete club, called IGNITION '23.

About Ignition '23: our annual event dedicated to unleashing the potential and creativity of our 3rd-semester students. Our tagline, "Ignite Your Potential, Unleash Your Creativity, " encapsulates our mission: to provide an inspiring and immersive experience that prepares you for the journey ahead. We've meticulously designed a comprehensive schedule focusing on academic, technical, and personal growth. Our goal is to nurture your talents, spark intellectual curiosity, and create a sense of belonging in our academic community. Join us for an unforgettable day of growth and inspiration!

Three days prior to the event, teams were assigned general themes and required to conduct surface-level research and gather knowledge about the respective domains. These themes were carefully selected to represent emerging backgrounds in E-Commerce, Cybersecurity, and Healthcare.

Formal event was started at 8.50AM sharply, on **20th of September 2023**, the event commenced with a warm **welcome speech** delivered by **Prof. Mary Jasmine E** Assistant Professor, Dept. of CSE (AI&ML),

Opening address by **Dr. Jayavrinda vrindanaman, Professor & Chairperson Dept. of CSE (AI&ML). Dr. Jayavrinda** maam has highlighted many key points on introduction to AI&ML Recent trends and Prospects. **Dr. Jayavrinda** has included about the current trends in the area of Artificial Intelligence, Machine Learning, Deel Learning, Data Science, Natural Language Processing, Health care etc. Maam has also shared her recent Journal Papers on AIML Domain.

During the formal event the department also shown his gratitude by celebrating **Teachers' day & Engineers day.**

Ms. Neha Amin 3rd sem AIML B Section motivated all students by informing about the teacher's day and the vital role of teachers in the field of education.
Mr. Chethan K Murthy 3rd sem AIML A Section addresses the gathering about the contribution of **Sir M. Visvesvaraya** in the memory of Engineers Day and recall about the hard work carried out by Sir M V during his tenure as Mysuru deewan

To end up with the formal function, Mr. Ratan Ravichandran Student, Department of CSE (AI & ML) proposed the vote of thanks.

At 10.05AM Orientation of Department a insight to AIML Department, **Prof. Pradeep Kumar K**, Assistant Professor, Dept. of CSE (AI&ML) briefed about the in and out of Department explaining the key points on dress code, discipline, scheme & Syllabus, Department faculty & students' achievements, BoS members, Industrial visit.

After the orientation program, technical activities from the AI Works@ DSU & DSU X Tempete club has been organized in A437 & A438. Team of 5th sem AIML coordinators Ratan Ravichandran, Sayli Pankaj Bande, Sri Bharath Sharma P, Shubhangee Das, Shriyans Arkal, Yudhajit Jana started with the Following events for 3rd sem AIML Students

- CryptoMath Hunt (Technical): solving the mathematical questions with the help of AI Algorithms.
- Jeopardy (Technical): an technical quiz on AIML domain was organized
- Interactive Activities: talk about public speaking, active involvement
- Aptitude Games: 3rd sem students took keen interest in playing aptitude games.
- Technical /IQ and Personality Enhancing

Ashtang AI : AI Architecture For Complex Ecosystems

The session started by welcoming the Resource Person - **Dr. Shailesh Kumar**, Pro-Vice Chancellor - **Dr. Amit Bhatt**, Dean - **Dr. Uday Kumar Reddy K R**, Chairperson - **Dr. Jayavrinda** and the student Faculty participants by Adnan, 3rd Year Student, Department of CSE(AI&ML). Followed by this **Dr. Vinutha N**, Associate Professor, Department of CSE(AI&ML) introduced the speaker for the session.

Dr.Shailesh Kumar,
Chief Data Scientist at the Centre of Excellence in AI/ML
JIO University.

Dr. Shailesh Kumar began his talk by giving introduction about how brain, Mind, Evolution, Quantum and Planet works? The speaker mentioned about the convergence of various technologies in the different domains that are used for formulating business problems and required for the evolution of products used in day-to-day activities, characteristics of complex ecosystem, Development of Ecosystem products for the next decade like smart cities, connectivity, Refineries, Agriculture, Healthcare. He empathised on the Utilization of AI for performing various cognitive activities. And explained about the Eight Layers of the AI Stack: Digitization, Interpretation, Causality, Prediction, Explanation, Controllability, Simulation. It is utilised for Building the API which are further used for the digitization, Automation, Democratization, Inclusion, Personalisation. He also empathised on the skills required for modern data scientist and discussed about the various Research Problems: Personalisation of Education, Agriculture, Vision Models for Healthcare, Genomics to Phenomics Mapping, Demand Forecasting of Supply of Energy, Climate Change and Sustainability, Universal Personal Assistance.

Finally, the resource person addressed the queries raised by the participants. Then the presidential remarks were given Pro-vice-chancellor and Dean. After the presidential remarks, Pro-vice chancellor - **Dr. Amit Bhatt** felicitated **Dr. Shailesh Kumar**. The session was concluded with the vote of thanks by Mokshitha, 3rd Year Student of AIML.

Student takeaway from the session : Automation, leveraging artificial intelligence (AI) and other technologies, has opened up new possibilities.

We extend our heartfelt gratitude to **Dr. Shailesh Kumar** for such an inspirational session and looking forward for more such sessions in the near future.

VIKAS GAME

2023

5th Semester ISRO URSC Visit

The Department of CSE (Artificial Intelligence and Machine Learning) organized a visit to U R Rao Satellite Centre for the Students of 5th Semester on 15th September 2023. The program was organized by **Dr. Jayavrinda Vrindavanam**, Professor & Chairperson, Dept. of CSE (Artificial Intelligence and Machine Learning), **Dr. Monika Goyal**, Assistant Professor, Dept. of CSE (Artificial Intelligence and Machine Learning).

The department organized 140+ students into 3 batches for the visit, each batch was headed by a faculty co-ordinator, Batch 1 – **Dr. Monika Goyal**, Batch 2- **Prof. Subhash Mondal** & **Prof. J Rajalakshmi**, Batch 3- **Dr. Vinutha N** to make sure the proceedings went smoothly. There were also several student co-ordinators who ensured that there was no hassle in any of the processes.

The purpose of this industrial visit was to gain firsthand knowledge about the operations, processes and technologies utilized in the URSC centre. Students visited the Research centre of URSC to learn about various space programs of India. They were also taken to the clean rooms where the space systems are being assembled. The students then moved on to the exhibition where different information about the satellites had been displayed. The students were deeply engaged during the presentations discussing the different space missions that the ISRO has taken upon.

Key takeaways from the visit were:
1. Mission Objectives and Requirements
2. Design Phase
3. Component Selection and Integration
4. Testing and Simulation
5. Manufacturing and Assembly
6. Launch Preparations
7. Launch and Deployment
8. Mission Operations

The students have gained a great amount of knowledge from the visit and were fascinated by ISRO's achievements.

5th Semester ISRO URSC Visit

Making of a satellite:
Satellites are sophisticated technological marvels, carefully crafted through a meticulous and multi-stage process. Their construction begins with thorough design and planning, where engineers and scientists determine the satellite's purpose, mission objectives, and technical specifications. Once the blueprint is in place, the satellite's various components are assembled with precision. These components typically include power systems, communication devices, sensors, propulsion systems, and scientific instruments, all of which must withstand the harsh conditions of space. The satellite's structural frame, often made of lightweight yet durable materials like aluminium or composites, provides the necessary support to hold these components in place. Furthermore, specialized coatings and thermal insulation help protect against extreme temperature fluctuations in space.

The integration of these components is carried out under stringent cleanroom conditions to prevent any contamination that could compromise the mission. After assembly, thorough testing procedures are conducted to ensure that every aspect of the satellite's functionality meets the predetermined specifications. This includes rigorous environmental testing, such as vibration and thermal vacuum tests, to simulate the harsh conditions of space. Once the satellite successfully passes all tests and quality checks, it is prepared for launch. Rockets are used to propel the satellite into its designated orbit, where it will fulfill its mission objectives, whether that be Earth observation, communication, scientific research, or navigation. The development of satellites represents a collaboration between engineers, scientists, and space agencies, with each step carefully orchestrated to ensure the satellite's success in the challenging environment of outer space.

Some of India’s most significant missions:
1. Chandrayaan-2: India's second lunar exploration mission, Chandrayaan-2, achieved significant success by deploying an orbiter, lander (Vikram), and rover (Pragyan) to study the Moon's south polar region. The orbiter continues to provide valuable lunar data.
2. Mars Orbiter Mission (Mangalyaan): Launched in 2013, Mangalyaan made India the fourth space agency globally to reach Mars. This successful mission continues to study the Martian atmosphere, surface, and mineralogy.
3. Astrosat: Launched in 2015: Astrosat is India's first dedicated multi-wavelength space observatory. It has made significant contributions to astrophysical research by observing celestial objects in various wavelengths, such as X-rays, ultraviolet, and optical.

IDEATHON 2023: A Crucible for Tech-Savvy Visionaries

DSU's Ideathon 2023, held on **November 3rd**, transcended the boundaries of a mere competition. It was a potent cocktail of intellectual pursuit, collaborative spirit, and technological firebrands, all meticulously orchestrated to unleash the hidden potential of B.Tech students. **Professor and Chairperson Dr. Jayavrinda V**'s vision birthed this event, fostering a platform where raw ideas were sculpted into tangible solutions with the chisel of cutting-edge technology.

The competition unfolded in two rounds, each presenting a real-world conundrum for students to grapple with. Armed with nothing but their ingenuity and grit, participants delved into a whirlwind of brainstorming sessions, where ideas ricocheted like charged particles, eventually coalescing into well-defined proposals.

This intellectual crucible was expertly navigated by a dedicated team of faculty members - **Professor Pradeep Kumar K, Dr. Mary Jasmine, and Professor Mitha Guru** - who provided invaluable guidance and mentorship. Their passion for innovation became a beacon, illuminating the path for student teams like guiding stars.

But the Ideathon's magic wouldn't have materialised without the tireless efforts of its student coordinators: **Anuj Dwivedi, Harsh Manelal, Chethan K Murthy , and Neha Amin**. They were the oil that kept the gears of inspiration turning, ensuring seamless organization and unwavering support from conception to execution. Their infectious enthusiasm fueled the competitive spirit, urging students to push the envelope of their creativity.

And push they did! Presentations crackled with the energy of nascent brilliance. Meticulously crafted slides danced on projector screens, each visual a testament to the hours spent meticulously weaving technical expertise with innovative solutions.

IDEATHON 2023: A Crucible for Tech-Savvy Visionaries

Judges, comprised of prominent industry experts and faculty members, found themselves enthralled by the sheer range and depth of ideas presented. From ingenious solutions for sustainable living to mind-boggling applications of artificial intelligence, the students unveiled a universe of possibilities, showcasing the immense potential that simmered within the DSU B.Tech community.

The Ideathon wasn't just about crowning victors; it was about igniting a passion for innovation that would long outlast the final buzzer. It was a shared journey of discovery, where students learned from each other, from their mentors, and from the very act of creation itself. The air thrummed with the unspoken language of collaboration, as teams transcended individual brilliance to craft solutions that were greater than the sum of their parts.

When the curtain finally fell on DSU Ideathon 2023, it left behind a legacy of inspiration and empowerment. It proved that within the confines of a university campus, amidst the clamour of textbooks and exams, resides a vibrant ecosystem of tech-savvy visionaries, just waiting to be unleashed. This event was more than just a competition; it was a clarion call, a resounding echo that announced the arrival of the next generation of tech pioneers, proudly hailing from DSU.

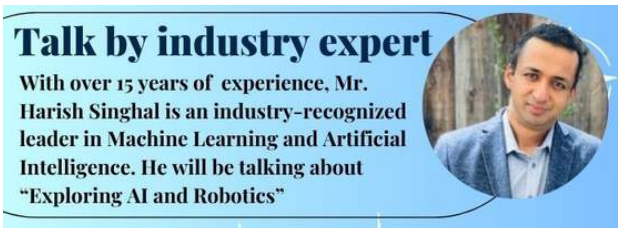
YANTROVE CHAPTER-1

Yantrove Takes Flight: Unveiling the Wonders of AI and Robotics

November 17th, 2023, marked a significant day for DSU's burgeoning tech enthusiasts. **The Department of CSE (AI & ML)** proudly launched its Yantrove Club, a platform dedicated to igniting students' passion for Artificial Intelligence and Robotics. To celebrate this momentous occasion and equip young minds with cutting-edge knowledge, the club hosted an exclusive **Tech Talk**, featuring **Mr. Harsh Singhal, the Head of AI & ML at Koo.**

Mr. Singhal, an industry veteran, graciously shared his wealth of experience and insights with the eager B.Tech students. His talk, held online from 9:00 AM to 10:00 AM, served as a captivating journey into the fascinating world of AI and Robotics. He shed light on the latest advancements, real-world applications, and the immense potential these fields hold for shaping the future.

YANTROVE CHAPTER-1



The true magic unfolded during the interactive Q&A session. Students, brimming with curiosity and fueled by Mr. Singhal's inspiring talk, seized the opportunity to clarify their doubts and delve deeper into specific topics. Witnessing this enthusiastic exchange, one could almost feel the gears of innovation turning within their minds.

Professors Subhash Mondal and **Mitha Guru**, the dedicated faculty coordinators for Yantrove, ensured a seamless and enriching experience for all participants. Their unwavering support and guidance created an environment conducive to learning and exploration.

The event was continued by inaugurating Yantrove club and project display by students. **Mr. Shaswat Saini** explained about his project on **hand gesture recognition**, followed by **Mr Sujay** who displayed his non-defensive robotic car, "**Jatayu**" inspiring students to contibute more projects to Yantrove club.

YANTROVE CHAPTER-1

Students participated in the colloquium on AI and Robotics. Aim of the colloquium was to solve real world problems using Artificial intelligence and robotics. The event concluded with 3 teams being awarded with first, second & third place. Memento along with Certificates were distributed to the winners. An E-certificate was presented to all the participants.

The Yantrove Club launch and Tech Talk transcended the boundaries of a mere event. It was a spark, igniting a fire of passion in the hearts of young tech aspirants. It provided them with a platform to not only gain valuable knowledge but also connect with industry experts and fellow enthusiasts. More importantly, it instilled in them the confidence to explore the uncharted territories of AI and Robotics, shaping them into the pioneers of tomorrow.

This inaugural event was a testament to the dedication of **Dr. Udaya Kumar Reddy K R**, **Dean of the School of Engineering**, and **Dr. Jayavrinda Vrindavanam V**, **Professor and Chairperson of the Department of CSE (AI & ML)**. Their unwavering commitment to fostering a culture of innovation within DSU continues to bear fruit, paving the way for the next generation of tech wizards.

With the successful launch of Yantrove Club and the inspiring Tech Talk by Mr. Harsh Singhal, DSU has taken a giant leap towards empowering its students to shape the future with Artificial Intelligence and Robotics. This is just the beginning of an exciting journey, and one can only imagine the wonders that these young minds will unlock in the years to come.

Skill Up Your Research Game: A LaTeX Workshop at Sai Vidya Institute of Technology

On **December 7th, 2023,** the Department of CSE at Sai Vidya Institute of Technology, Rajanakuntte-Yelahanka Bengaluru, hosted a one-day workshop designed to empower students with the tools and techniques for crafting impactful research articles. Titled "Enhancing Skills and Ideas towards Usage of Research Article Writing with LaTeX," the workshop served as a valuable platform for honing research writing skills and mastering the powerful typesetting system, LaTeX.

The event was expertly guided by two dynamic resource persons from our Department :

- **Prof. Pradeep Kumar K., Assistant Professor in the Department of CSE(AIML)** at Dayananda Sagar University, brought his extensive academic experience and expertise in LaTeX to the table. His insights into research writing and **LaTeX** proficiency proved invaluable for the participants.

- **Mr. Chethan K Murthy , a 3rd semester UG student from the Department of CSE(AIML)** at Dayananda Sagar University, offered a unique perspective on LaTeX learning. His youthful enthusiasm and relatable approach resonated well with the student audience, creating a comfortable and engaging learning environment.

Skill Up Your Research Game: A LaTeX Workshop at Sai Vidya Institute of Technology

The workshop spanned from 9:00 AM to 4:00 PM, providing ample time for participants to delve into the theoretical aspects of research writing and gain practical hands-on experience with LaTeX. The sessions covered a comprehensive range of topics, including:

- Fundamentals of research writing: Structuring research papers, effective citation and referencing techniques, and crafting compelling arguments.
- Introduction to LaTeX: Understanding the core principles of LaTeX syntax, exploring document structuring commands, and utilizing packages for enhanced functionality.
- Typesetting equations and mathematical expressions: Mastering the art of creating professional-looking mathematical formulas within LaTeX documents.
- Creating tables and figures: Effectively incorporating data visualizations and illustrations into research papers using LaTeX.
- Collaboration and version control tools: Utilizing Git and other tools for efficient teamwork and research paper version management.

Throughout the workshop, Prof. Pradeep Kumar and Mr. Chethan K Murthy fostered an interactive learning environment. Participants actively engaged in discussions, asked questions, and tackled practical exercises, solidifying their understanding of the concepts. The workshop concluded with a Q&A session where participants received personalized guidance and addressed any lingering doubts.

Stepping into Serenity: A Day at Pyramid Valley Meditation Centre

On **8th December 2023**, the students of the "AI & ML" department from Dayananda Sagar University embarked on a captivating journey to the **Pyramid Valley Meditation Centre.** The day unfolded with a blend of adventure, relaxation, and a profound exploration into the realms of meditation and spirituality.

The excursion commenced at 1:45 PM, as the students assembled and boarded a bus for the 6 km journey to Pyramid Valley. Spirits were elevated, and the ambiance resonated with merriment and harmonious melodies, setting the stage for an unforgettable outing.

During the brief journey, students engaged in various activities, exchanging laughter and reveling in music on the bus. The camaraderie among the group enhanced the overall enthusiasm, transforming the transit into an integral part of the adventure itself.

Upon reaching Pyramid Valley, the students were welcomed by the serene surroundings and the imposing pyramid structure. The initial activity on the agenda was kayaking, offering a chance for relaxation and fostering team cohesion. The students gracefully navigated the waters, savoring the scenic beauty of the valley.

Following the kayaking adventure, the group explored the vicinity on rental cycles, enabling them to cover more ground and absorb the tranquil atmosphere of Pyramid Valley.

The pinnacle of the trip was undeniably the visit to the meditation centre. The students immersed themselves in a blissful meditation environment. Within the pyramid stood a tower accessible only to meditators with sessions lasting 30 minutes or more. The tranquil ambiance of the pyramid enhanced the meditative experience, instilling a sense of calm and introspection.

Before departing, students had the opportunity to peruse the merchandise section, where they could acquire souvenirs and mementos to commemorate their visit to Pyramid Valley. Many of our friends opted for Yoyos and other captivating souvenirs to memorialize this journey.

The bus reached the Dayananda Sagar University campus at 3:45 PM, concluding a day replete with adventure, relaxation, and exploration. The Pyramid Valley Meditation Centre excursion delivered a distinctive and enriching experience for the students, fostering unity and well-being among the participants. This outing not only provided a respite from academic pursuits but also encouraged a deeper understanding of mindfulness and self-discovery.

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DAYANANDA SAGAR UNIVERSITY
SCHOOL OF ENGINEERING
DEPARTMENT OF CSE (AI & ML)

STUDENT

ACHIEVEMENTS

A dive into futuristic journey

NATIONAL

ACHIEVEMENTS

2023-24

NATIONAL LEVEL ACHIEVEMENT

GirlGeekHack23

KLS Gogte Institute of Technology

Students of the Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), School of Engineering, Dayananda Sagar University have won the First Prize in GirlGeekHack23 organized by Team IEEE CS KLS GIT. Belgaum.
This young team showcased their idea in building the concept for Helping Woman with the help of AI technology.

The “Team Yantraveeras”

1) Anuj dwivedi ENG21AM0011 Department of CSE(Al & ML).
2)Chethan K Murthy ENG22AM0009 Department of CSE(Al & ML).
3) Arjun pulivarthi ENG22AM0076, Department of CSE(Al & ML)..
4) Ananya R Shet ENG22AM0075, Department of CSE(Al & ML).

NATIONAL LEVEL ACHIEVEMENT

Smart NITTE Hackathon

NITTE Moodabidre

Students of the Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), School of Engineering, Dayananda Sagar University have won the First Prize in Smart NITTE Hackathon organized by NITTE, Bengaluru

1) Neha Amin (ENG22AM0117), Department of CSE(Al & ML).
2) Anuj dwivedi ENG21AM0011 Department of CSE(Al & ML).
3) SHARDA SINGH ENG22AM0057 Department of CSE(Al & ML).

NATIONAL LEVEL ACHIEVEMENT

Painting

INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

First semester CSE(AI&ML) student Aditya,Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), School of Engineering, Dayananda Sagar University has won the Second Prize in Painting Competition organized by IIT, Bombay

Mr. Aditya 3rd from L

NATIONAL LEVEL ACHIEVEMENT

REVA Hackathon

REVA UNIVERSITY

Students of the Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), School of Engineering, Dayananda Sagar University have won the Second Runner Up Prize in REVA hackathon Crop Craft, REVA University, Bengaluru.

This young team showcased what their idea Crop Craft- Discovering the future of farming Terra tech Titans an APP based on AI & IoT.

1) Neha Amin (ENG22AM0117), Department of CSE(Al & ML).
2) Arjun pulivarthi (ENG22AM0076), Department of CSE(Al & ML).
3) Jeyadheep (ENG22AM0141), Department of CSE(Al & ML).
4) Ritvik Vasundh (ENG22AM0125), Department of CSE(Al & ML).

NATIONAL LEVEL ACHIEVEMENT

Team Neural Ninjas won 1st runner up at Cryptic 2.0

Atria Institute of Technology, Bengaluru

Students of the Department of Computer Science and Engineering (Artificial Intelligence and Machine Learning), School of Engineering, Dayananda Sagar University have won the First Runner Up Prize in Cryptic 2.0,IEEE machine learning hackathon conducted at Atria Institute of Technology, Bengaluru

This young team showcased what their idea in Cyber Security Domain a monetary award of Rs. 3000/- has been received from the organizers.

The “Team Neural Ninjas” Passionate and want to learn more led by
1) Challa Priyankar (ENG20AM0017), Department of CSE(Al & ML).
2) Punith Pechetti (ENG21AM3028), Department of CSE(Al & ML).
3) Raghav (ENG20AM0044), Department of CSE(Al & ML).

STUDENT ACHIEVEMENTS

TOPPERS

GAURAV KAMATH
USN: ENG20AM0023
SEM: 6th
SGPA: 9.86

VIDHI KESHWANI
USN: ENG21AM3016
SEM: 6th
SGPA:9.71

VAIBHAVI AKSHITA REDDY T
USN: ENG21AM3042
SEM: 6th
SGPA: 9.67

Happy to announce that 22 students have scored more than 9 SGPA in 6th semester

STUDENT ACHIEVEMENTS

TOPPERS

ALISHA ALIAS
USN: ENG21AM0005
SEM: 4th
SGPA: 9.60

REDDIMALLI HEMANTHKUMAR REDDY
USN: ENG21AM0094
SEM: 4th
SGPA:9.48

JUVVI SAI AKSHITHA
USN: ENG21AM0052
SEM: 4th
SGPA: 9.44

ANUJ DWIVEDI
USN: ENG21AM0011
SEM: 4th
SGPA: 9.44

Happy to announce that 14 students have scored more than 9 SGPA in 4th semester

STUDENT ACHIEVEMENTS

INTERNATIONAL PLACEMENTS

YASH NARULE
TOYOTA CONNECTED CO.LTD
35 LAKHS PA.

BENSON T YOHANNAN
INTELLIGENT SCIENCE CO.LTD
27.5 LAKHS PA.

STUDENT ACHIEVEMENTS

PLACEMENT DETAILS

HARI PRADHA P
USN: ENG20AM0027
SEM: 7th
Placed Company: edgeVerve
Package: 8LPA

M ADARSH PRYAN
USN: ENG20AM0034
SEM: 7th
Placed Company: edgeVerve
Package: 8LPA

VIKAS JUTLAD
USN: ENG20AM0057
SEM: 7th
Placed Company: edgeVerve
Package: 8LPA

JERAMIAH T VARGHESE
USN: ENG21AM3010
SEM: 7th
Placed Company: edgeVerve
Package: 8LPA

STUDENT ACHIEVEMENTS

PLACEMENT DETAILS

YATHISH M
USN: ENG20AM0062
SEM: 7th
Placed Company: edgeVerve
Package: 8LPA

C S JEEVAN
USN: ENG21AM3005
SEM: 7th
Placed Company: edgeVerve
Package: 8LPA

MOHAMMED AMRIN BUSHRA TAJ
USN:ENG21AM3022
SEM: 7th
Placed Company: edgeVerve
Package: 8LPA

STUDENT ACHIEVEMENTS

PLACEMENT DETAILS

ROHAN R
USN: ENG20AM0046
SEM: 7th
Placed Company: edgeVerve
Package: 8LPA

L ANAGHA
USN: ENG21AM3019
SEM: 7th
Placed Company: edgeVerve
Package: 8LPA

KRISHNA KANT DASH
USN: ENG21AM3018
SEM: 7th
Placed Company: edgeVerve
Package: 8LPA

STUDENT ACHIEVEMENTS

INTERNSHIP DETAILS

Tharun Subramanya S ,7th sem
USN:ENG20AM0056
Internship at Reliance Jio
Duration for 3 months

Mohammed Amrin Bushra Taj ,7th sem
USN:ENG21AM3022
Internship at Trispace Technologies
Duration for 6months

Shivendu Pratap Singh,7th sem
USN:ENG20AM0007
Internship at Techcurators
Duration for 4months

Gautham Raj S,7th sem
USN:ENG21AM1001
Internship at SISA Information Security
Private limited
Duration for 8months

STUDENT ACHIEVEMENTS

INTERNSHIP DETAILS

Harika Gandiboina,7th sem
USN:ENG20AM0028
Internship at Supply Wisdom
Duration for 3 months

THIRUMURU CHAKRADHAR REDDY ,7th sem
USN:ENG21AM3041
Internship at Trispace Technologies
Duration for 6months

Hari Pradha P ,7th sem
USN:ENG20AM0027
Internship at Asymmetri
Duration for 6months

M Adarsh Pryan,7th sem
USN:ENG20AM0034
Internship at Matriot
Duration for 3months

STUDENT ACHIEVEMENTS

KSFA C-Division football organized by Karnataka state football association (2023 July 10 - 19)

Masteo S Thomas ,2nd year represented blues football academy at Karnataka state football association C- Division in month of July .Total team participated was 6 in our group ,it was a league match ,no of players was 11+8,match was played 45+15+45 minutes.

Cricket Tournament Organised By St. Francis College In Month Of July 2023

In Tantra Carnival Event At St. Francis Koramangala ,Pratik Mathur, 2nd year represented Dayananda Sagar University At Box Cricket Tournament In Month Of July, Total Team Participated Around 30, It Was A Knock Out Match, Number Of Player Was 7+3, Match Was Played For 7 Over Per Inning.

Vikas S ,2nd year Kho kho runner up event conducted by DSU on independence day Carrom Runner up conducted by DSU sports meet 2023.

STUDENT ACHIEVEMENTS

SOUTH ZONE INTER UNIVERSITY NATIONAL BASKETBALL TOURNAMENT MEN 2023-2024

We extend our recognition to Rakshit K, a second-year student from the AI-ML department, for his notable participation in the South Zone Inter-University National Basketball Tournament Men 2023-24 held in Kerala, Thiruvananthapuram from November 13th to 18th.

Rakshit, alongside four other outstanding players, played a crucial role in the twelve-member University Basketball Team. Though the victory eluded us, their collective efforts and Rakshit's commendable performance showcased the essence of teamwork and dedication.

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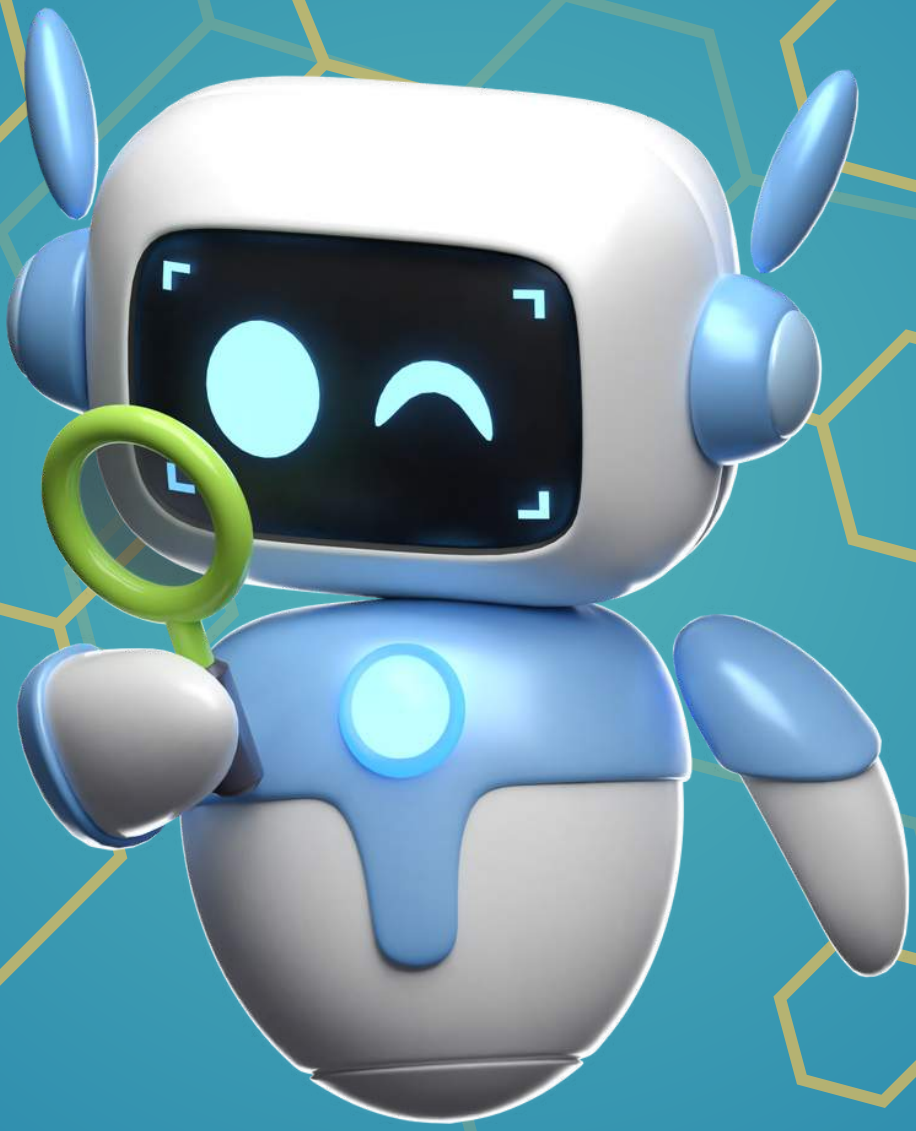
FACULTY



ACHIEVEMENTS

A dive into futuristic journey

FACULTY ACHIEVEMENTS

Dr.Jayavrinda Vrindavanam
Professor & Chairperson, AI and ML
SOE,DSU

Paper publication:

- Jayavrinda Vrindavanam, Roshni M. Balakrishnan, Raghav Nanjappan and Gaurav Kamath "**Empowering Speech-Impaired Individuals: EEG-Driven Cognitive Expression Translated into Speech**" International Journal of Computer Applications August 22, 2023
- Jayavrinda Vrindavanam, R. Haarika, S. MG and K. S. Kumar, "**Diabetes Prediction in Teenagers using Machine Learning Algorithms**" IEEE Xplore 2023 .

Active research collaboration :

- Study on the Prediction of non-communicable diseases in collaboration with Mahatma Gandhi Institute of Medical Sciences, Sevagram, Wardha (Anautonomous government medical college in, Maharashtra)
- Quantum computing and Machine learning area in collaboration with IBM
- Machine Learning in health care Application in Collaboration with Dr. Chandramma Dayananda Sagar Institute of Medical Education and Research (CDSIMER)

FACULTY ACHIEVEMENTS

Sanjeev Kumar
Professor of Practise, AI and ML,SOE,DSU

Paper publication:

Title: ΔNp63 overexpression promotes oral cancer cell migration through hyperactivated Activin A signaling

Prof. Sanjeev Kumar, Professor of Practice, Dept. of AI&ML has published a paper titled " **ΔNp63 overexpression promotes oral cancer cell migration through hyperactivated Activin A signaling** " in the Journal Science Direct along with scholars from the following reputed institutes:

- Teni Laboratory, India
- Cell and Tumor Biology, Advanced Centre for Treatment, Research and Education in Cancer (ACTREC), Tata Memorial Centre Navi Mumbai, Maharashtra, India
- Homi Bhabha National Institute,Mumbai, Maharashtra, India
- BioCOS Life Sciences Private Limited, Bengaluru,Karnataka,India.

The Journal Publication is the result of over a few years of solid research work of **Prof. Sanjeev Kumar** and his research team.

- Resource person for Hands-on Workshop on "**Research Methodology, Technical Writing and LATeX** " held at DSU on 22-07-2023 organized by the DSU ACM student chapter
- Session chair for FDP on title "**Advances in Drug Research**" held at CDSIMER on 22-08-2023 organised by the department pharmacology, CDSIMER
- Resource person for "**Computational Tools in Formulation Development and Drug Delivery**" held at DSU from 24th July to 28th July organized by department of Pharmaceutics

FACULTY ACHIEVEMENTS

Dr. Monika Goyal
Assistant Professor
AI and ML Program
Department of CSE (AI & ML)
SOE, DSU

Paper publication:

- Title of the Paper: "**Classification of Brain Tumor Disease with Transfer Learning Using Modified Pre-Trained Deep Convolutional Neural Network**" Accepted and Presented in Scopus Indexed Springer conference organized by NIT Jaipur.
- Title of the BOOK Chapter: "**A Robust Model for Optimum Medical Image Contrast Enhancement and Tumour Screening**" Published in Scopus Indexed Deep Learning for Healthcare Services Book, Bentham Science Publisher.
- Role of Artificial Intelligence in 3D Bone Image Reconstruction, Book chapter Accepted in Scopus Indexed Deep Learning for Healthcare Services Book, Bentham Science publisher, UAE.
- Title of the BOOK Chapter: "**Security, Privacy, Trust, Other Issues in Industries 4.0**" Accepted in Scopus Indexed Artificial Intelligence Applied to Industry 4.0 Book, Wiley Publisher.
- Reviewed Papers in various Scopus-indexed International IEEE and Springer conferences.
- Delivered a talk in a value-added course conducted by CSE-AIML Department.

Active Research Collaboration:

- Sawai Man Singh Medical College and Hospital, Jaipur.
- Doing work on real-time Ultrasound data for the detection of various Kidney related diseases.
- Medical Image Processing, Computer Vision, Machine Learning, and Deep Learning.

FACULTY ACHIEVEMENTS

Subhash Mondal
Assistant Professor
AI and ML Program
Department of CSE (AI & ML)
SOE, DSU

Paper publication:

- S. Mondal, R. Maity, Y. Omo, S. Ghosh, and A. Nag (2024) "An Efficient Computational Risk Prediction Model of Heart Diseases Based on Dual-Stage Stacked Machine Learning Approaches," in IEEE Access, Doi: 10.1109/ACCESS.2024.3350996. (WoS-SCI-IF: 3.9, Scopus)
- Mondal, S., Ghosh, S. & Nag, A. Brain stroke prediction model based on boosting and stacking ensemble approach. International Journal of Information Technology. (2023). https://doi.org/10.1007/s41870-023-01418-0. (Scopus, UGC-Care listed)
- S. Mondal, R. Maity, C. Rai, S. Pramanik and A. Nag, "Lung Cancer Risk Prediction Features Influence Model Based on Machine Learning Techniques," TENCON 2023 - 2023 IEEE Region 10 Conference (TENCON), Chiang Mai, Thailand, 2023, pp. 1339-1344, Doi: 10.1109/TENCON58879.2023.10322343. (Scopus)

Conference Paper

- **“Cancer Text Article Categorization and Prediction Model Based on Machine Learning Approach”, 2023 IEEE 3rd Edition of Mysore Subsection Flagship International Conference (MysuruCon), Mysuru, India, 2023**
- **“Random Forest-based Underwater Temperature Prediction Model for IoT Devices”, 2023 IEEE 3rd Edition of Mysore Subsection Flagship International Conference (MysuruCon), Mysuru, India, 2023**

FACULTY ACHIEVEMENTS

Dr. Viji Fernando
Associate Professor
AI and ML Program
Department of CSE (AI & ML)
SOE, DSU

Paper publication:

- S. Sundararajan, P. Ebby Darney, K. Palanivel Rajan,A.Vegi Fernando, J. Nirmal Jothi, R. Santhana Krishnan, "An AI-Enhanced IoT Model for three-way authentication and location tracking in secured jewellery boxes", 5th International Conference on Mobile Computing and Sustainable Informatics(ICMCSI 2024)", 18th and 19th January 2024, Lalitpur, Nepal.

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GALLERY

Jun - Dec 2023

GALLERY

APPRECIATION

The AI&ML Department of Dayananda Sagar University launched a logo design competition earlier this year, inviting students to create a unique that embodies the essence of artificial intelligence and machine learning. The competition aimed to foster creativity and engagement among students while selecting an emblem that resonates with the department's core values and goals.

Department of AI&ML selected the logo made by RITUL BHOJ student of AI&ML department as the official logo for the AI&ML Department. The logo serves as a symbol of innovation and growth for the department and the university as a whole.

The central element of the logo is a stylized representation of a brain, symbolizing the realm of intelligence, learning, and human cognition.
The brain design is divided into two distinct halves: one representing Artificial Intelligence (AI) and the other representing Machine Learning (ML). This division visually communicates the department's focus on both AI and ML technologies.

The half of the brain that represents AI is depicted with intricate neural connections and pathways. This imagery signifies the complex network of algorithms and processes that simulate human-like intelligence and decision-making.
On the ML side of the brain, similar intricate connections are illustrated, highlighting the intricate web of data and patterns that machine learning algorithms analyze and utilize to make predictions and improvements.
The choice of colors for the logo could further enhance the symbolism. Bright and modern colors could represent innovation, while subtle gradients might evoke a sense of depth and complexity inherent in AI and ML technologies.
By combining these elements, the logo becomes a powerful representation of the AIML Department's goals and aspirations, as well as a reflection of the ever-evolving landscape of artificial intelligence and machine learning.

RITUL BHOJ
5th sem (AI&ML)
USN – ENG21AM0096

EDITORIAL BOARD

FACULTY CO-ORDINATORS

Dr. Jayavrindavanam V
Chairperson
CSE (AI & ML)

Prof. Jeevaraj R
Assistant Professor
CSE (AI & ML)

Prof. MithaGuru
Assistant Professor
CSE (AI & ML)

STUDENT EDITORS

Dhruti Purushotham
Design Editor
Student
CSE (AI & ML)

Chethan Keshav Murthy
Content Editor
Student
CSE (AI & ML)

Rakshit K
Cover Page Illustration
Student
CSE (AI & ML)