



KSSEM
K S SCHOOL OF ENGINEERING AND MANAGEMENT

Data Pulse

Exploring AI and Data Science

Volume 2

2023-24

A Newsletter by
Department of AI&DS



ARTIFICIAL INTELLIGENCE DATA SCIENCE

VISION

To be recognized globally for excellence in Artificial Intelligence and Data Science Research and Innovation

MISSION

To deliver high-quality education by fostering a transformative environment where students are encouraged to thrive in their academic endeavors, to prepare students to obtain application knowledge in the burgeoning industry and to become deeply knowledgeable in Artificial Intelligence and Data Science.

To give students the opportunity to fully develop their own skills and realize their potential, while being taught by experienced, skilled, and committed staff, to uphold a degree of competence and standard in all the courses they take to become experts in data science and Artificial Intelligence.

To improve and equip students with the skills they need to favorably impact society through the use of this cutting edge technology.

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Foreword



Sri. R. Rajagopal Naidu
President

I am extremely happy to take note of the efforts put by the editorial team of this newsletter which has brought out all the co-curricular activities of the Department of Artificial Intelligence & Data Science at KSSEM. The sincere efforts put forth by the staff of the department in organizing these activities is highly appreciable and I am sure that all the students who are actively involved in these activities are truly benefited.

I sincerely admire the efforts put by the staff of the department to create opportunities for giving additional value to our students and wish them the very best for all their good work.

I am delighted and very happy to take note of the Co-curricular and other activities organized by the Department of Artificial Intelligence & Data Science at KSSEM. I appreciate the commitment and dedication of all the faculty for arranging these learning opportunities to kindle the interest among students and motivate them to do better in their learning endeavors. The Management is also committed to support these learning opportunities and helping our students to become better professionals.

I congratulate all the staff and students for bring out this News Letter and portraying their department so well. I wish them all the best for all their future academic endeavors.



Sri. R. Leela Shankar Rao
Hon. Secretary



Sri. T. Neerajakshulu
Hon. Treasurer

It gives me immense pleasure to take note of the Newsletter brought out by the Department of Artificial Intelligence & Data Science at KSSEM. This newsletter brings out the activities carried out in the department during the previous academic term and gives us an idea about the value addition made to our students. We at KSGI are dedicated to create a lot of learning opportunities to add higher value to our students.

I heartily congratulate the staff and students for their good efforts to showcase these activities so well. I wish the staff and students the very best in all their co-curricular and extra-curricular endeavors.

Foreword



Dr. K V A Balaji
CEO, KSGI

I am delighted that the Department of Artificial Intelligence & Data Science at KSSEM is bringing out the Second Volume of its Newsletter and the Editorial Team has showcased its talents in portraying all the activities held during the previous academic term. The department's interest and engagement in creating a host of other learning opportunities is very commendable. This will expose our students to the frontiers in this domain and encourage the students to hone their skill sets.

I congratulate the staff and students for all their efforts in keeping the flag of KSSEM high and wish them the very best in all their academic and learning endeavors.

I am pleased to note that the Department of Artificial Intelligence and Data Science at KSSEM is releasing the second volume of its newsletter, which showcases the department's various activities. This platform will enable both faculty and students to highlight their skills and recent advancements in Data Science.

My congratulations to the editorial team for their dedication, and I extend my best wishes to the Department for a successful newsletter.



Dr. K Rama Narasimha Rao
Principal/Director



Mr. Manjunath T.K.
Associate prof. & HOD

We are excited to present the second volume of the Artificial Intelligence and Data Science (AI&DS) Department newsletter at KSSEM. Our mission continues to be fostering the next generation of AI technologists with a strong foundation in data science, achieved through immersive learning, industry collaborations, and cutting-edge research initiatives. In this volume, we not only celebrate academic excellence but also highlight our commitment to innovation and collaborative growth. We encourage students to engage in our wide range of activities, including workshops, seminars, expert talks, and interdisciplinary projects, as we shape the future of AI and data science together.

About the Newsletter.

The AI&DS Department Newsletter continues to be your source for updates, insights, and achievements within our department. In this second volume, we bring you a fresh collection of highlights, including departmental events, noteworthy accomplishments from both students and faculty, and the latest trends shaping the field of AI. You'll also find insightful articles and new opportunities to explore careers in this ever-evolving domain.

As always, our goal is to promote collaboration, knowledge sharing, and celebrate the achievements of the AI&DS Department. Whether you are a student, faculty member, or industry professional, we encourage you to engage with us and continue to be part of the conversation.

Thank you for your continued support, and we look forward to delivering more valuable content in this and future editions.



Seminar Hall

The seminar hall is equipped with over 150 computers and offers comprehensive facilities. It is used to conduct seminars and workshops, as well as training sessions, conferences, and guest lectures. The hall provides a conducive environment for learning and collaboration, supporting a wide range of academic and professional activities.



Skill Lab

The skill lab is equipped according to VTU guidelines and is available for use by any student in the college. The lab features high-end computers suitable for tasks such as machine learning, data science, and other intensive applications. Additionally, it is equipped with a projector for enhanced presentations and collaborative work. By using this lab, students can develop skills apart from those prescribed in their academic syllabus.



Faculty



Faculty



Faculty



Non Teaching Staff



Mrs. Lakshmi G
Office Assistant



Mr. Manjunath S
Programmer



Mr. Naresh P G
Programmer



Mrs. Pallavi V
Programmer

Non Teaching Staff



Mrs. Hitha S
Programmer



Mr. Ramu S
Attender



Mrs. Pavithra K M
Attender



Mr. Siddram
Attender

MOUs Signed



MeVi Technologies

2024-2026

Conducting short-term and long-term training programs for UG students, internships/professional practices, Student Development Programs (SDP), Faculty Development Programs (FDP), Short Term Training Programs (STTPs) for faculty, and guest lectures for students and faculties.



Department Events

Tech Talk on Generative AI

Mr. Sridev Ramesh
100x Engineers



Mallasandra, Karnataka, India
KS Boys Hostel Rd, Bengaluru, Mallasandra, Karnataka
Lat 12.859797°
Long 77.543955°
10/01/24 01:34 PM GMT +05:30



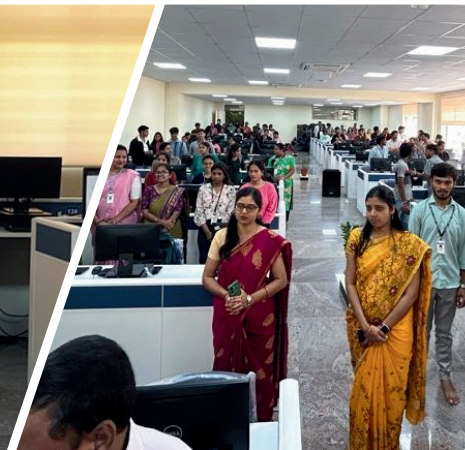
Mallasandra, Karnataka, India
Unnamed Road, Bengaluru, Mallasandra, Karnataka
Lat 12.859386°
Long 77.543449°
23/11/23 10:23 AM GMT +05:30

Tech Talk on Systems Engineering

Mr. Kantha Chikke Gowda

5 Days Workshop on Deep Learning

Mrs. Megha B S
Mevi Technologies LLP



Session on Git and Github

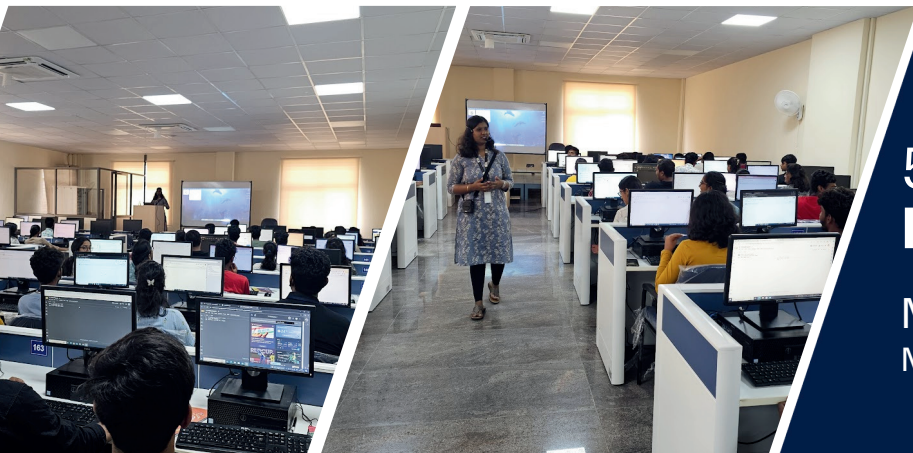
Mr. Hanumanth Reddy
PyGenicArc

Mallasandra, India
Engineering and Management, No.15, Mallasandra, Bengaluru-560109

Department Events

Visit to GKVK

Part of SCR Activities



5 Days Workshop on Data Analytics

Mrs. Megha B S
Mevi Technologies LLP

Session on Waste Management

Mr. D R Kumaraswamy



Tech Talk on Unveiling power of AI

Mrs. Megha B S
Mevi Technologies LLP

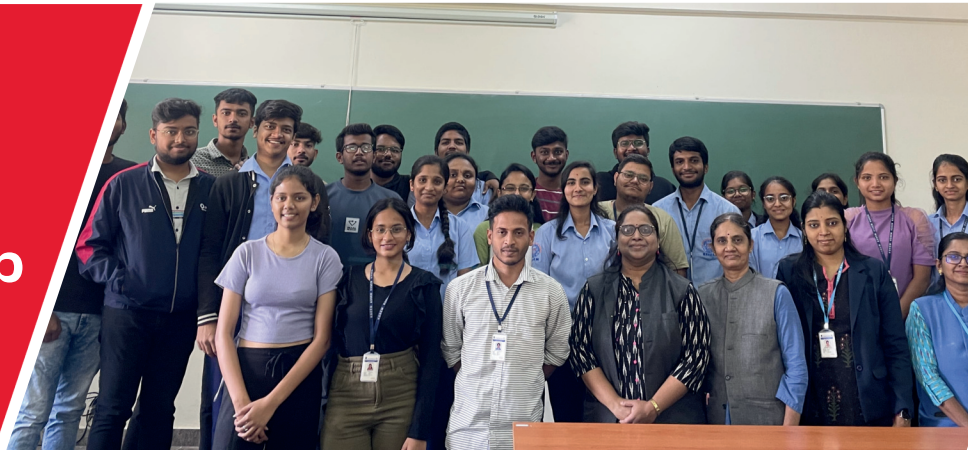
Department **Events**

Sports Meet Cricket and Throwball



Skill Assessment by FindinBox Pvt. Ltd.

Inauguration of Growth Guru Club



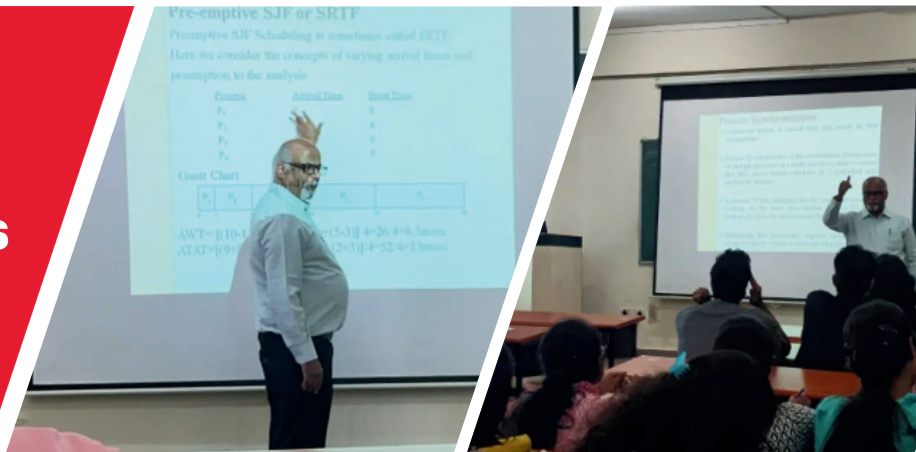
Expert Talk on Health, Nutrition and Fitness

Mr. Rajeev H B

Department Events

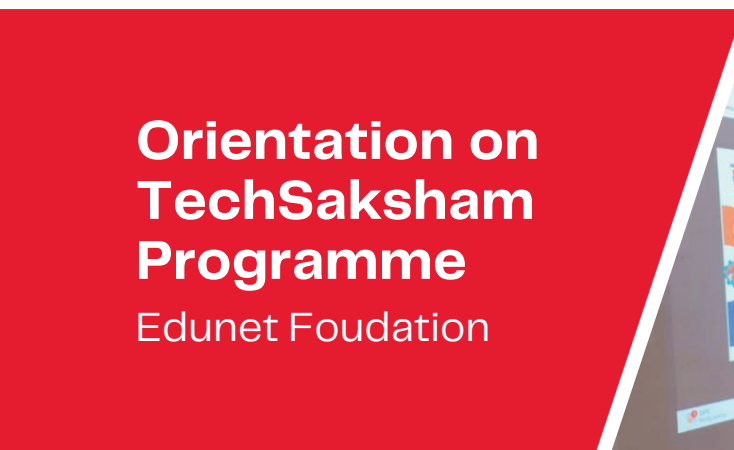
Expert Talk on Operating Systems

Dr. Shivakumar Dalali



Talk on Career Guidance

Mr. Narayan R
Founder, JB Portals

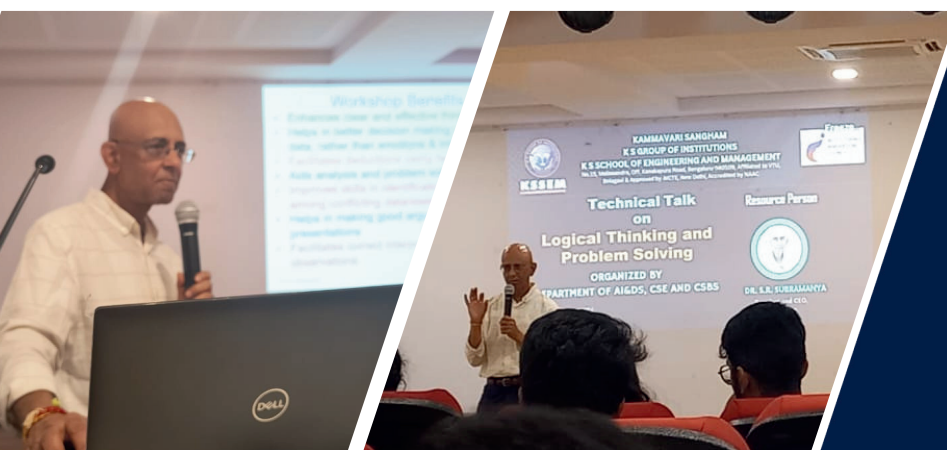


Orientation on TechSaksham Programme

Edunet Foudation



Mallasandra, Karnataka, India
KS Boys Hostel Rd, Bengaluru, Mallasandra, Karn
Lat 12.85981°
Long 77.543988°



Tech Talk on Logical Thinking & Problem Solving

Mr. S R Subramanya



Faculty Achievements

RESEARCH PAPERS PUBLISHED

Mr. Manjunath T K

“Fuel Prediction Model for Driving Patterns using Machine Learning Techniques”

Mrs. Pavana H

“Design of Magnetic Field Harvester with Energy Management unit to power wireless sensors in smart grid”

FDPs Attended

- **Mr. Manjunath T K**

Threats & Challenges in Cyber Security using Data Analytics & Machine Intelligence. (Reva University)

- **Mrs. Rajashree D Ingale**

Cyber Security (RVIT)

- **Mrs. Padmapriya K**

Cyber Security (RVIT)

- **Ms. Harshitha H S**

A Deep Dive into Langchain, OpenAI, Computer Vision & ML(NITTE)

- **Mrs. Pavana H**

Orientation Excellence: Empower New Faculty for success(KSSEM)

- **Mrs. Madhusmitha Mishra**

AI and ML for Medical Image Analysis using Python (CMRIT)

- **Ms. Harshitha H S**

Orientation Excellence: Empower New Faculty for success(KSSEM)

- **Mrs. Madhusmitha Mishra**

Orientation Excellence: Empower New Faculty for success(KSSEM)

- **Mrs. Madhusmitha Mishra**

Effect of Generative AI in Modern Research and Industry (SNU, Kolkata)

- **Mrs. Tanushree Mohapatra**

5 Days online workshop on "Inculcating Universal human values in Technical Education"

- **Mrs. Pallavi V**

Database Management System(SJBIT)

- **Mr. Manjunath S**

Database Management System(SJBIT)



Faculty Achievements

CERTIFICATIONS

- **Mrs. Madhusmitha Mishra** has successfully completed the **Exploring the World of Data Structures course** from **NPTEL**
- **Mrs. Madhusmitha Mishra** has successfully completed the **Python for Data Science course** from **NPTEL**
- **Mrs. Tanushree Mohapatra** has successfully completed the **Data Analytics with Python** course from **NPTEL**.
- **Mrs. Tanushree Mohapatra** has successfully completed the **Introduction to Machine Learning course** from **NPTEL**.
- **Mrs. Tanushree Mohapatra** has successfully completed the **Artificial Intelligence Primer Certification** from **Infosys Springboard**
- **Mrs. Tanushree Mohapatra** has successfully completed the **Artificial Intelligence Foundation Certification** from **Infosys Springboard**



Student Achievements

Academics

2021 Batch

5th Semester Toppers

1 **VANDANA C**
1KG21AD056

2 **M MOUNIKA**
1KG21AD026

3 **DIVYASRI M**
1KG21AD007

6th Semester Toppers

1 **VANDANA C**
1KG21AD056

2 **VAISHNAVI D**
1KG21AD055

3 **RUCHITHA B J**
1KG21AD042

2022 Batch

3rd Semester Toppers

1 **TAMANNA AHMAD**
1KG22AD058

2 **JAYASHREE N**
1KG22AD024

3 **HARISHREE S**
1KG22AD019

4th Semester Toppers

1 **TAMANNA AHMAD**
1KG22AD058

2 **HARISHREE S**
1KG22AD019

3 **JAYASHREE N**
1KG22AD024



Student Achievements

CERTIFICATIONS

- **Manoj B** has successfully completed the **Python For Data Science** course from **NPTEL**.
- **Tammana Ahmad** has successfully completed the **Programming, Data Structures and Algorithms Using Python** course from **NPTEL**.
- **Manoj B** has successfully completed the **Computer Vision** from **NPTEL**.
- **Mokshitha S Thota** has successfully completed **Programming with Python** training from Internshala.
- **Niveditha P** has successfully completed **Web Development training** from **Internshala**.
- **Tamanna Ahmad** has successfully completed the **Data Analytics with Python** course from **NPTEL**.
- **Manoj B** has successfully completed the **Postman API Fundamentals Student Expert** course from **Postman Academy**.
- **Manoj B** has successfully completed the **Artificial Intelligence Primer Certification** from **Infosys Springboard**.
- **Manoj B** has successfully completed the **Principles of Generative AI** Certification from **Infosys Springboard**.
- **Manoj B** has successfully completed the **Gold Milestone** as a Student Ambassador for **Let's Upgrade**.
- **Manoj B** has successfully secured an internship at **Infosys Springboard** in the AI domain.

PARTICIPATION

- **Manoj B, Mokshitha S Thota, Niveditha P** participated in **Quantum Hacks** organized by QuantumX-24 on 24th, 25th of January 2024, held at New Horizon College of Engineering.
- **Chandan S Bhat, Manoj B, Srinivas Kulkarni** attended the **Edu-Vitality** organized by IEEE-ComSoc, RVCE in collaboration with IEEE ComSoc Bangalore Chapter, Intel Technology India on June 7th-8th, 2024 at RV College of Engineering.
- **Vaishnavi D, Naina R Koushik, Kashish Shaikh and Tammanna Ahmad** attended **JITHACK** hosted by Jyothy Institute Of Technology on 7th-8th June 2024.
- **Harish S and M N Ganesh** attended **TechTonic** hosted by Dayananda Sagar Academy of Technology and Management on 13th-14th July 2024



Student Achievements

CLUBS

IEEE Computer Society Office Bearers

- Vandana C – Chair
- Tejas J – Vice Chair
- Suhas U – Secretary
- Mounika M – Counselor
- Varsha B – Treasurer
- Manoj B – Web Master
- Chandan S Bhat – Report Incharge



IEEE
COMPUTER
SOCIETY



ROTARACT CLUB
K S S E M

Rotaract Club Of KSSEM

- Suhas U – Sergeant At Arms
- Ashwin Malasani – Joint Community Service Director.
- Lokapriya R – Social Media Director.
- Manoj B – Professional Development Director.
- Shiva Shakthi E – Public Relations Director.

GRID KSSEM

- Srinivas Kulkarni – Marketing And Outreach Lead
- Tamanna Ahmad – Technical Lead



OpenAI-o1

OpenAI has introduced the o1 model series in 2024, focusing on advanced reasoning with a chain-of-thought approach. This enhances its ability to handle complex tasks such as coding and scientific analysis with greater accuracy.

Key highlights of OpenAI o1 :

- **Better Reasoning:** Compared to earlier models like GPT-4, o1 is designed to spend more time processing and reasoning through its responses, making it more robust when dealing with complicated questions or tasks.
- **Enhanced Coding Abilities:** o1 is particularly well-suited for programming and real-time code debugging. It can analyze and debug complex code with higher precision than its predecessors.
- **Variants:** The o1 series includes multiple versions, such as o1-preview and o1-mini, with the mini version optimized for faster, more cost-effective tasks, while the preview version provides more powerful reasoning at a higher computational cost.

Google Gemma



Gemma 2

9B & 27B

Google Gemma is a new family of lightweight, open-source AI models designed for efficient use on various devices, from laptops to mobile and cloud environments. It is based on Google's Gemini technology and aims to democratize AI by making powerful models more accessible.

The Gemma models come in two sizes:

- Gemma 2B (2 billion parameters): Ideal for lightweight applications such as mobile devices and edge computing. It can perform tasks like on-device language translation and intelligent chatbots without the need for heavy cloud resources.
- Gemma 7B (7 billion parameters): Suited for more complex tasks like sophisticated text generation, detailed question answering, and high-quality language translation.

Both models are available as pre-trained variants for general use or instruction-tuned variants for task-specific optimization. This makes Gemma versatile for a wide range of applications, including AI chatbots, content summarization, and more advanced question-answering systems.

NVIDIA Blackwell AI Chip

Introduction

NVIDIA Blackwell AI Chip is a graphics processing unit (GPU) designed specifically for advanced artificial intelligence applications, particularly in training of large language models (LLMs).

Features

The NVIDIA GB200 NVL72 which is associated with the Blackwell AI chip is able to perform 30x faster than other CPUs, offering accelerated timelines and higher energy efficiency. The GB200 chip can deliver up to 20 petaflops of AI performance and has 208 billion transistors, which is a substantial increase compared to its predecessor, the H100, which provided only 4 petaflops. This performance boost allows for the training of larger and more complex AI models, making it a powerful tool for AI companies.

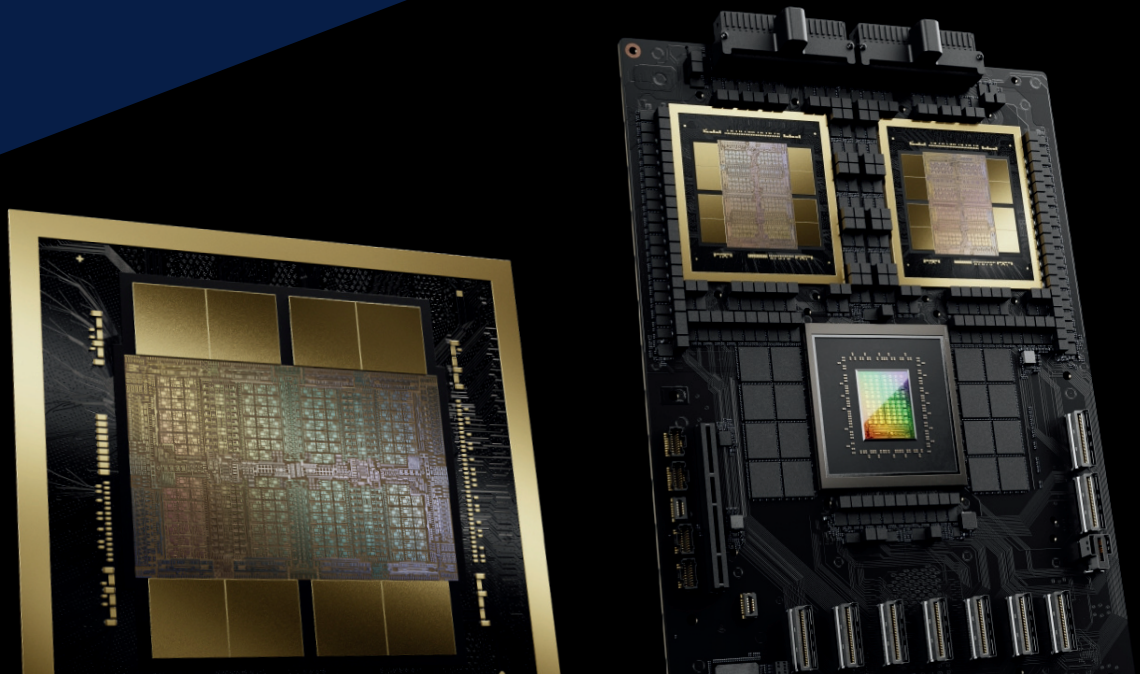
The Blackwell architecture is designed to be more energy-efficient, reportedly reducing energy consumption by up to 25 times compared to previous models. The architecture is designed to support the training and operation of generative AI models with up to 10 trillion parameters, making it suitable for the most demanding AI workloads.

Applications

Amazon Web Services (AWS), Google Cloud, Microsoft Azure
Climate modeling, Molecular biology

Chandan S Bhat
1KG22AD010

Darshan Kumar A
1KG22AD014



How ML and AI are Transforming the Fashion Industry

Machine learning (ML) and Artificial Intelligence (AI) are transforming the fashion industry by enhancing design, production and shopping experiences. AI powered algorithms analyze social media and market data to identify emerging trends, allowing designers to create styles that matches consumer preferences. In fashion, ML models analyze customers purchase history to make personalized recommendations, optimize pricing strategies and improve inventory predictions

CASE STUDY:

Zara partnered with Jetlore, a leading AI & ML company, to enhance their ability to predict customer behavior using structured data like size, color, fit, and style. Jetlore's advanced AI algorithms allow Zara to analyze large volumes of customer data to better forecast preferences and tailor personalized recommendations. This collaboration has significantly improved customer engagement and loyalty through targeted marketing campaigns and curated shopping experiences, ultimately driving revenue growth.

Additionally, Zara implemented the Just-In-Telligent supply chain system, an AI-driven solution designed to tackle logistical challenges. By using real-time data and predictive analytics, this system helps Zara anticipate demand fluctuations, optimize inventory levels, and streamline the distribution process. As a result, Zara can minimize supply chain delays, ensuring timely product deliveries to both physical stores and online customers, which enhances operational efficiency and customer satisfaction.

Kashish Shaikh
1KG22AD027



Navigating AI Fatigue

Artificial Intelligence, in the modern sense, has been around for decades, with its groundwork going back to the 1920s. Since then, AI has been the basis for many technological developments. These range from chess games against a computer to the navigation of Martian rovers. As of late, the launch of ChatGPT and similar large language models (LLMs) based technologies has changed the landscape. The accessibility of these tools has catapulted AI from a distant, futuristic possibility to the reality of the present moment. Now, AI can be used by just about any user to generate content, automate mundane tasks, and more. It has also led to a recent uprise in the inclusion of AI tools in various tools and software. Unfortunately, with the advancement in new technologies comes the pitfall of them becoming 'trends'. A study published in the Journal of Hospitality Marketing & Management reports that the ubiquity of AI tools may lead to a feeling of disillusionment in some consumers. This phenomenon has been dubbed "AI fatigue".

As students of Artificial Intelligence, we need to be able to navigate these perceptions appropriately. While developing a project, a general strategy could be to start with the problem, not the technology. Emphasising the problems that Artificial Intelligence is solving rather than using technology as a crutch can improve its impression and give it a more positive perception. By understanding and addressing such concerns, we can ensure that AI remains a valuable and beneficial tool.

TAMANNA AHMAD

1KG22AD058



The First International AI Treaty

A Game-Changer for AI and Human Rights

A significant development in AI occurred with the signing of the Council of Europe Framework Convention on Artificial Intelligence, Human Rights, Democracy, and the Rule of Law during a Justice Ministers meeting in Vilnius. This treaty, adopted by 46 countries including EU members, Japan, the U.S., and Australia, is the first legally binding international agreement ensuring AI systems respect human rights.

Key Aspects of the Treaty:

- Purpose: Protects people from AI risks, unlike the EU's AI Act, which is regional.
- Human-Centered AI: AI must respect human rights and democracy.
- Transparency: AI operations must be clear, with mechanisms for accountability if rights are violated.
- Risk Management: A framework to monitor AI risks to ensure ethical use.
- Misuse Prevention: Safeguards against using AI to harm democracy, such as justice system fairness.

Importance of the Treaty:

- Covers the entire AI lifecycle from design to decommissioning.
- Global application, impacting both public and private sectors.
- Establishes a new legal standard for AI governance.
- Promotes responsible innovation aligned with human rights.

Exemptions

While most AI systems are covered, exceptions exist for national security, although these must still respect international laws.

In summary, this treaty marks a major advance in global AI governance, aiming to balance innovation with the protection of human rights and societal values.

MANOJ B

1KG22AD036



NEWSLETTER TEAM

Editor

Mrs. Rajashree Ingale

Student Co-ordinators

Mr. M N Ganesh

Mr. Varun Bharadwaj

Mr. Kiran Kumar M

Dept. of
**Artificial Intelligence
and Data Science**

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