July - December 2023

Volume 02 Issue 03

# DATA GLIMPSE

A Newsletter of Department of Computer Science and Engineering (Data Science) SOE, DSU, Bangalore

# Department of Computer Science and Engineering (Data Science)

## VISION AND MISSION DSU

**Vision:**

To be a centre of excellence in education, research & training, innovation & entrepreneurship and to produce citizens with exceptional leadership qualities to serve national and global needs.

**Mission:**

To achieve our objectives in an environment that enhances creativity, innovation and scholarly pursuits while adhering to our vision

## VISION AND MISSION Data Science

**Vision:**

To produce Engineers for Industry and Society in the field of Computer Science and Engineering (Data Science) by providing Excellence in Education, Research and Entrepreneurship with focus on sustainable solutions to fulfill global needs.

**Mission:**

The Department of Computer Science and Engineering (Data Science) in committed to:

- Impart quality education, critical thinking and sustainable learning practices in the domain of Computer Science and Engineering (Data Science) with ethical values and leadership qualities.
- Inculcate Interdisciplinary Research and Innovation by establishing Industry-Academia collaboration to solve critical problems.
- Prepare graduates to become Ethical Data Science practitioners to contribute in data driven global society.

# DEAN'S MESSAGE

**Dr. Udaya Kumar Reddy K R**
Dean - School of Engineering
Professor, Dept. of Computer Science and Engineering
DSU

I am delighted that the Department of Computer Science and Engineering (Data Science) is bringing out the newsletter that can provide wonderful 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 different ways. In the current issue, you'll meet some remarkable students and faculty who are making a difference in the technical aspects and otherwise. We are hoping to build this endowment with your support, to afford even more opportunities for students to take part in this important component of their graduate education.

I hope this magazine provides the reader a wonderful insights and I thank the editorial team for their wonderful effort in bringing out this newsletter.
Wish you all the best.

# CHAIRPERSON'S MESSAGE

**Dr. Shaila S G**
Professor & Chairperson
Department of CSE
(Data Science) SOE,DSU

It gives me immense pleasure and pride to introduce the second volume Issue 3 of the Newsletter DATA GLIMPSE from the Department of Computer Science & Engineering (Data Science). The Data Science is designed to bridge the industry gaps in terms of research and development using cutting-edge technologies. The program aims to meet the requirements of various job roles in Data Science.

The students and faculty members of the program have contributed technologically to solving real-world challenges through projects, hackathons, and quizzes. The program has offered various workshops and webinars for the students to develop their skills and knowledge in various domains. These events are effectively captured in the newsletter in the form of articles and achievements. I hope the Data Science newsletter motivates and encourages the students and faculty members with ample opportunities and exposure.

I thank the students, faculty members, and the editorial team for their wonderful efforts in bringing out this newsletter.

# ABOUT THE PROGRAM

B.Tech CSE (Data Science) is a 4-year undergraduate degree programme. Data Science teaches the students how to combine Machine Learning techniques, algorithms, tools, business acumen and mathematics and apply on raw data to extract insight information from it. In short, technology algorithm development and data inference are blended together to solve complex problems analytically in Data Science.

Throughout the entire duration of the programme, the students are taught how to amalgamate business knowledge, tools and statistics to generate business value in creative ways.

The four-year undergraduate curriculum includes a detailed delivery of Basic Sciences, Mathematical Foundations, Statistical Foundations, Artificial Intelligence, Machine Learning, Data Science, Deep Learning, and Data Visualization.

The curriculum imparts 21st century skills having the following components: Liberal education aspects for all round development, courses that trigger new age skills, project based learning, special topics (hands-on sessions on multiple topics with mentoring from expert), option for MOOC, UG Research Project/Product Development/Internships.

The curriculum focuses on Liberal Art Courses, Foundation Courses, Professional Courses, and Electives that helps them build expertise in some specialized areas. Curriculum developed also emphasis on Design oriented thinking, Communication, Collaboration and Creativity right from 1st year.

A degree in Computer Science (Data Science) can lead to the following job roles in a variety of industries such as Retail, Finance, E-commerce, Healthcare, IT services:

- Data Scientist
- Data Analyst
- Business Analyst
- Data Engineer
- Senior Data Engineer
- Senior Data Analyst
- Data Director

**What's inside...**

- Articles
- Programme Events
- Staff Achievements
- Student Achievements
- Result Analysis

And more....

# FACULTY LIST

**Dr. Shaila S G**
**Professor & Chairperson**

Dr. Shaila S G has earned her Ph.D in Computer Science from NIT, Trichy, Tamil Nadu for her thesis on Multimedia Information Retrieval in Distributed System. She has 17 years of experience in teaching & research in the concerned field. She has worked for CPRI, Bangalore as a Trainee Engineer. Later, she worked as a Research Fellow for a DST project, India for a period of 3 years. She has also worked in Indo-US collaborated project for "Obama-Singh Knowledge Initiative Program" in the University of Nevada (UNLV), Las Vegas, United States. She is a certified IBM trainer for the Business Intelligence. Her research areas are Data mining, Information Retrieval, Image Processing and Computational Neuroscience. She has published more than 50 research articles in reputed Journals and Conferences, books and book chapters. She has 11 Indian Patents and 2 Australian Patents.

**Dr. Kakoli Bora**
**Associate Professor**

Dr. Kakoli Bora is an Associate Professor in the Department of CSE (Data Science). She had completed her Ph. D. in Computer and Information Science (Astroinformatics) from Visveswaraya Technological University, Belagavi, Karnataka. Her thesis title is Machine learning approach to understanding Astrophysical Data: The Final frontier: Novel Algorithmic study. She has 17 years of teaching & research experience in the field of Computer Science. She has worked for a startup named Happymonk AI Labs as Senior Data Scientist. Her research interests include Data mining, Image Processing and Deep Learning. She has published more than 15 research articles in reputed Journals and Conferences. She has published two book chapters.

**Prof. Shivamma D**
**Assistant Professor**

Shivamma D is working as an Assistant Professor in the Department of Computer Science and Engineering (Data Science). She is pursuing Ph.D in Dayananda Sagar University, Bengaluru. She completed her M.Tech from Birla Institute of Technology and Science (BITS), Pilani (Rajasthan). She has an extensive experience of 10 years in the field of Teaching and Research. She has worked as an IT Officer/IT Programmer/Data Analyst at National Institute of Mental Health And Neuro Science (NIMHANS), An Institute of National Importance, Government of India located at Bangalore. Her research interests are in the area of Technology Enabled Digital Learning, Machine Learning, Image Processing, Computational Neuroscience, Big Data Analytics and Data Science.

**Prof. Monish L**
**Assistant Professor**

Monish L is working as an Assistant Professor in the Department of Computer Science & Engineering (Data Science). He is pursuing Ph D on Image Analytics in Dayananda Sagar University. He has completed M. Tech from Dayananda Sagar University, and B.E. from The Oxford College of Engineering. He has 1 year of industrial experience in ADAS. He is a certified trainer of JAVA and FSD from Virtusa. He has published 3 Book chapters in an international journal. His paper is awarded with the best paper award in the ICAMIDA 2022 conference. His areas of interest are Data Mining, Knowledge Discovery, Data Analytics, Machine Learning and Artificial Intelligence.

# FACULTY LIST

**Prof. Sindhu A**
**Assistant Professor**

Sindhu A is working as an Assistant Professor in the Department of Computer Science & Engineering (Data Science). She has completed M.Tech from Dayananda Sagar University, and B.E. from BMS College of Engineering,Bangalore.Worked as an intern in Tech Citi Technologies. She has published 3 research papers. Areas of interest are Computer Vision, Machine Learning,Data Mining,Artificial Intelligence and Image Processing.

**Prof. Vaishali Bagewadikar**
**Assistant Professor**

Vaishali Bagewadikar is working as an Assistant Professor in the Department of Computer Science and Engineering (Data Science). She has completed her M.Tech from University of Visveswaraya College of Engineering, Bangalore and BE from Basaveshwara Engineering college, Bagalkot. She has 7 years of teaching experience and 1 year of industry experience from Unisys India Pvt ltd. Her area of interests are cloud and Fog computing, Machine learning, Data Science.

**Prof. Shahwar Ara Kamal S**
**Assistant Professor**

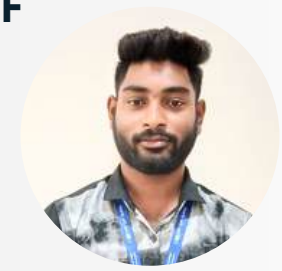
Shahwar Ara Kamal S is working as an Assistant Professor in the Department of Computer Science and Engineering (Data Science). She has completed her B.E in Information Science from APS College of Engineering and M.Tech from Dayananda Sagar University, Bangalore. She has published one paper at International Conference Springer. Her areas of interest are Computer Networks, Machine Learning.

**Prof. Manjula M**
**Assistant Professor**

Manjula M is working as an Assistant Professor in the Department of Computer Science & Engineering (Data Science). She is pursuing PhD on Image Retrieval in Dayananda Sagar University. She has completed M.Tech in Computer Network & Engineering from East west Institute of Technology Bangalore, affiliated to VTU She has 4 years of Teaching Experience in Dayananda Sagar Institute of Technology and 1 year IT experience as a Web Developer, I Published 4 paper in International Journals and 1 paper in National Conferences. Her areas of interest are Cyber Security and Forensics, Image Processing, Machine Learning and Artificial Intelligence.

## SUPPORTING STAFF

**Divya R**
**Teaching Assistant/Lab Instructor**



**Praveen R S**
**Office Assistant**

ARTICLES

# The Art and Science of Data: Turning Raw Information into Economic Gold

In the contemporary landscape, data stands as the catalyst for innovation and economic prosperity, and within this realm, the intersection of art and science known as data science assumes a central role in the alchemical process of turning raw information into economic gold. This interdisciplinary field blends statistical analysis, computer science, and industry-specific knowledge to distill meaningful insights from extensive datasets, opening up unprecedented opportunities for both businesses and governmental entities.

Essentially, data science is a harmonious amalgamation of artistic intuition and scientific methodology. The artistry lies in the imaginative and creative aspects, involving the formulation of pertinent questions and the design of effective analytical approaches. The scientific facet encompasses the systematic application of statistical models, machine learning algorithms, and data engineering techniques to derive valuable knowledge. Transforming raw data into economic gold necessitates the meticulous choreography of data cleaning, pattern identification, and model creation. This intricate process demands not only technical proficiency but also a profound comprehension of the particular industry or domain to ensure the practicality and relevance of the insights generated.

The economic ramifications of mastering the art and science of data are profound. Businesses armed with insights gleaned from customer behavior, market trends, and operational efficiency can make strategic decisions that elevate their competitiveness and bolster profitability. For example, retailers can fine-tune inventory management through predictive analytics, tailoring their offerings with precision to meet consumer demand. Governments can also harness the power of data science to formulate evidence-based policies, allocate resources judiciously, and effectively address societal challenges. The transformative potential of data science extends beyond mere analysis of historical data; its true power lies in the ability to forecast future trends, providing a roadmap for sustained economic success.

In a world inundated with data, the fusion of art and science in data science emerges as a guiding light for economic advancement. As organizations invest in fostering data-driven cultures and technologies, the value extracted from raw information transcends conventional boundaries. The artistry resides in the thoughtful questions posed, the hypotheses constructed, and the imaginative application of analytical techniques. Simultaneously, the scientific rigor ensures that resulting insights are not only creative but also statistically robust. Together, they chart a course where raw data metamorphoses into economic gold, propelling innovation, efficiency, and prosperity in our data-centric era.

**Dr. Shaila SG**
**Chairperson & Professor**
**Dept. of CSE (DS)**

# Diving into Data Waves: Navigating Innovation in the Sea of Data Science

In the dynamic tapestry of technology, data science has emerged as the linchpin of innovation, ushering in a new era where recent trends redefine the very boundaries of what is achievable. A standout phenomenon is the ascendancy of Explainable AI (XAI), steering the focus beyond mere predictive accuracy to understanding and interpreting the decision-making processes of machine learning models. This paradigm shift addresses the opaque nature of certain algorithms, ushering in transparency and trustworthiness, particularly in critical domains such as healthcare and finance.

A compelling trend lies in the seamless integration of data science with edge computing, responding to the ubiquitous proliferation of the Internet of Things (IoT). Data scientists now harness the power of edge analytics to process and scrutinize data closer to its origin, diminishing latency and elevating real-time decision-making. This approach proves particularly invaluable in time-sensitive scenarios, exemplified by the realms of autonomous vehicles and smart cities.

Federated learning emerges as a beacon on the horizon, championing privacy in an era rife with data security concerns. As apprehensions surrounding data privacy escalate, federated learning empowers models to undergo training across decentralized devices sans the necessity to share raw data. This novel approach ensures the confinement of sensitive information to individual devices, striking a delicate balance between collaborative model training and safeguarding user privacy.

Concurrently, the intersection of data science and domain expertise takes center stage. Businesses are awakening to the pivotal role of domain-specific knowledge in extracting profound insights from data. Data scientists, in a harmonious alliance with professionals from diverse fields, meticulously tailor models and analyses to the unique intricacies of different industries, resulting in solutions that are not only pertinent but also impactful.

In summation, the realm of data science is undergoing a metamorphic evolution, characterized by an unwavering commitment to transparency, decentralized computing, privacy preservation, and cross-disciplinary collaboration. These trends not only mold the contours of the present but also lay the groundwork for a future where data science stands as the vanguard in propelling innovation across a spectrum of industries.

**Prof. Shivamma D**
**Assistant Professor**
**Dept. of CSE (DS)**

# Unleashing the Power: The Influential Role of Data Science in Shaping National Economies

In today's digital age, data science stands at the forefront of driving transformative change in national economies. At its core, data science amalgamates statistical methodologies, computer science algorithms, and domain-specific expertise to extract meaningful insights from vast datasets. This interdisciplinary approach offers governments and businesses unparalleled tools for decision-making, paving the way for more informed and strategic actions. From optimizing resource allocation to crafting targeted policies, data science has become an indispensable asset in the economic toolbox of nations.

An undeniable strength of data science lies in its ability to predict and plan, contributing significantly to economic forecasting. By leveraging advanced analytics and machine learning models, economists can identify patterns within historical data, enabling them to make more accurate predictions about key economic indicators. Governments equipped with this foresight can proactively plan for economic downturns, capitalize on emerging trends, and design policies that address the specific needs of different regions or industries. This predictive power enhances the resilience and adaptability of national economies in an ever-changing global landscape.

On the business front, data science has become a cornerstone for competitiveness. Companies harness the power of data to optimize operations, understand customer behaviour, and identify untapped markets. Predictive analytics empowers businesses to anticipate demand, streamline supply chains, and tailor marketing strategies, fostering increased efficiency and profitability. This data-driven approach not only propels individual companies forward but also contributes to the overall economic growth of nations by creating an environment that encourages innovation, entrepreneurship, and sustainable development. As the influence of data science continues to grow, it is evident that the synergy between data-driven decision-making and economic development will shape the future trajectory of nations worldwide.

**Prof. Monish L**
**Assistant Professor**
**Dept. of CSE (DS)**

# Deep Learning for Language Understanding: Unlocking the Power of Neural Networks in NLP

In recent years, there has been a significant advancement in the field of language processing, largely attributable to the remarkable progress in deep learning technology. This transformative innovation has endowed machines with a profound ability to comprehend human language and engage in dialogue that simulates human interaction. Prior to the advent of deep learning, conventional methods in natural language processing were characterized by a certain cumbersome nature, relying heavily on manual feature engineering and statistical model refinement to achieve rudimentary language understanding.

However, with the emergence of deep learning, there has been a paradigm shift. Neural networks, akin to artificial brains, have commenced learning language directly from data sources, discerning intricate relationships between words, the coherence of sentences, and the idiosyncrasies inherent in human language. This capability extends beyond mere words; neural networks adeptly handle various forms of textual data, ranging from succinct tweets to elaborate academic dissertations, with remarkable proficiency.

With neural networks assuming the mantle, tasks such as sentiment analysis and document categorization have been streamlined. These networks possess the capacity to sift through vast swathes of text, identifying subtle patterns and nuances that may elude human observers. Moreover, they excel in grasping contextual nuances, a feat facilitated by recurrent and convolutional neural networks, which elucidate the sequential and structural aspects of language.

Nevertheless, despite the commendable strides made by deep learning, challenges persist. Understanding the decision-making processes within neural networks remains an ongoing endeavor. Furthermore, the issue of bias poses a significant concern; while our models are formidable, they are not infallible, occasionally reflecting biases inherent in the training data. Yet, amidst these challenges, the trajectory of deep learning continues to push the boundaries of language understanding. Moving forward, it is imperative to engage in rigorous inquiry and collaborative efforts to ensure that AI-driven communication remains inclusive

**Nitin Prajwal R**
**3rd Semester**
**Dept. of CSE (DS)**

# PROGRAMME EVENTS

## MATLAB EXPO 2023 WORKSHOP - "DRIVING INTO THE FUTURE: AI-ENABLED AUTONOMOUS SYSTEMS" ORGANIZED BY MATHWORKS 13TH JULY, 2023


**Introduction:** The MATLAB EXPO is an annual event organized by MathWorks, the company behind MATLAB, a powerful and widely used programming language and computing environment for technical and scientific computing. The expo typically brings together engineers, researchers, educators, and industry professionals to explore the latest advancements in MATLAB and its applications across various fields.

**Date and Venue:** The MATLAB EXPO 2023 Workshop was held in Bangalore on July 13 2023 at Radisson Blu, attracting a large audience eager to learn and engage with experts from MathWorks.

**Workshop Overview:** The workshop focused on diverse topics, spanning across multiple domains, demonstrating the versatility of MATLAB in solving real-world problems. It included keynote presentations, technical sessions, hands-on workshops, and networking opportunities for attendees to connect with each other and with MathWorks representatives.

**Key takeaways:**

• Up-to-Date Knowledge: Workshops like these are an excellent opportunity to learn about recent advancements in the software and how they can be applied to real-world problems.

• Practical Skills: to use MATLAB more effectively in their specific domains, whether it's data analysis, image processing, optimisation, or machine learning.

• Networking and Collaboration: This provides a platform to share ideas, collaborate on projects, and potentially find solutions to common challenges.

• Industry Use Cases: Understanding how MATLAB has been applied successfully in various domains

• Expert Insights: Keynote presentations from renowned experts may offer valuable insights into trends, best practices, and future directions in the field of technical computing and data analysis.

**Faculties attended:**
Dr. Shaila S G, Professor and Chairperson, Dept. of CSE (DS)
Prof. Shivamma D, Assistant Professor, Dept. of CSE (DS)
Prof. Monish L, Assistant Professor, Dept. of CSE (DS)

# ONE WEEK FACULTY DEVELOPMENT PROGRAM "DATA ANALYTICS AND MACHINE INTELLIGENCE FOR CYBER SECURITY THREATS AND CHALLENGES" 25TH JULY TO 31ST JULY, 2023





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 members of CS cluster in enhancing the knowledge of Data Science, Machine Learning and 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.

Day-1:
The first day started with the Inauguration session. 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. Dr. Shaila SG, Chairman, Dept. of Computer Science and Engineering (Data Science) gave a welcome address and followed by introduction of chief guest by Dr. Durbadal Chattaraj, Dept. of Computer Science and Engineering (Cyber Security). The Chief guest gave a keynote address on Cyber security trends in Machine Learning and Data Science. He mentioned the importance of FDP for educational institutions in order to shape their students to be ready for industry. Dr. Kiran B Malagi, Chairman, Dept. of CSE (Cyber Security) gave the overview of the entire FDP. Dr. Udaya Kumar Reddy, Dean, SoE, DSU addressed everyone and thanked the management for giving permission to organize this kind of FDP to the in-house faculties. He requested all the faculties to make use of all the sessions of FDP. Dr. M K Banga, dean-research, DSU requested the participants to consider enrolling for a Ph. D to find their research topic. The Chief Guest and Deans have highlighted a comprehensive overview of Cyber Data Analytics, Cloud Computing technologies, and Artificial Intelligence and Machine Intelligence (AI/ML) techniques specifically used to address the unique issues and challenges posed by today's Cyber Criminals. Dr. Jayavrinda Vrindavanam V, Chairman, Dept. of CSE (AI&ML) concluded the inauguration session by vote of thanks.
The second session of Day-1 was delivered by Mr. Ajay Ganapule, TCS, Bangalore where he introduced cyber security and its threats. The last session of the day was carried by Ms. Moutan Sarkar, TCS, Bangalore on Cyber Forensics.

Day-2: 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.

Day-3: 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 next session was jointly conducted by Dr. Hemant Rathore, BITS, Goa Campus, Goa and Dr. Mohit Sewak, Microsoft, India on AI for Android Malware Detection where they discussed how Machine Learning and Deep Learning algorithms can be used in Android Malware detection. The last session was handled by Dr. Pooja Agarwal- Senior research scientist IBM on Introduction to Machine learning and its Applications where she introduced ML and NLP techniques for data analysis.

Day-4: The fourth day sessions were conducted by Dr. Ashwini Kodipalli and Mrs. Hemavati, Department of Computer Applications and Automation, IISc, Bengaluru on Recent trends and advances in Deep Learning. The speaker's emphasis was on Deep Learning algorithms like CNN, Autoencoders, U-Net, GANs, and Transformers. They focused on the working principles of these techniques.

Day-5: The last day session-1 was conducted on Career growth in Cyber Security by Mr. Ajay Ganapule, TCS, Bangalore where he gave insights on how students should prepare for the long term career in cyber security. The speaker focuses on the requirements from students for entering the industry. The next session was on Universal Human values by Mr. Anantha Ramayya, Former Professor, IISc, Bangalore where he taught us how to inculcate human values in professional and personal life. It was a must-have session for all of us.
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. We seek blessings from God with an invocation song sung by Dr. Kiran B Malagi, Chairman, Dept. of CSE (Cyber Security). The participants were addressed by all the dignitaries and the certificates were distributed to them. The event ended with the national anthem followed by lunch.

**The Key Takeaways of the FDP:**

- Got introduced to cyber data and cyber forensics.
- Understood the statistical behaviour of the cyber data and showcased with various techniques.
- Understood the cyber data behaviour using data science approaches and malware detection using various machine learning approaches.
- Understood the deep learning approaches that include the rise of transformer-based models, unsupervised models for cyber security use cases.
- Got to know the carrier opportunities in cyber security and Human values.

# WORKSHOP ON "INK AND INSIGHT: AN ART OF CRAFTING RESEARCH PAPERS AND THESIS" 18TH AUGUST, 2023



The DataScience@DSU Club, the Department of CSE (Data Science) organized a workshop on "Ink and Insight: An Art of Crafting Research Papers and Thesis" held on 18th August 2023 organized by Dr. Shaila S G, Professor and Chairperson, Dept. of CSE (Data Science), Dr. Kakoli Bora, Associate Professor, Prof. Shahwar Ara Kamal S, Assistant Professor, Dept. of CSE (Data Science).

The Speaker was in house faculty Dr. Kakoli Bora gave an insight on how to write research papers. The session started with an introduction to the different technical documents like scientific paper, user manuals, whitepapers, and about journal and conference papers. The speaker discussed the procedures to be followed and each component of a research paper.

At the end of the event an evaluation was carried out and the students submitted great feedback.

**The Takeaways of the event are:**

1. Introduced to conference and journal paper publication
2. Got to know different types of technical writing
3. Understood the steps to follow while writing technical papers
4. Introduced to the key components of a technical paper

# "STUDENT NAAC CONNECT: BRIDGING AWARENESS"
# 18TH AUGUST, 2023



The Department of CSE (Data Science) organized an awareness program on "Student NAAC Connect: Bridging Awareness" held on 18th August 2023, from 10:00 am to 11:00 am organized by Dr. Shaila SG, Professor & Chairperson, Dept. of CSE (Data Science), Prof. Monish L , Assistant Professor, Dept. of CSE (Data Science).
The Speaker in-house faculty Prof. Monish L gave an insight on understanding of NAAC (National Assessment and Accreditation Council), its role in assessing and accrediting higher education institutions, and its significance in maintaining quality education.

**The Takeaways of the event are:**

1. Understanding of NAAC
2. Quality Assurance Knowledge
3. Accreditation Process
4. Institutional Improvement
5. Best Practices
6. Recognition and Career Development

# "ONAM CELEBRATION"
# 26TH AUGUST, 2023



The DataScience@DSU Club, the Department of CSE (Data Science) organized a "Onam Celebration" held on 26th August 2023 organized by Dr. Shaila S G, Professor and Chairperson, Dept. of CSE (Data Science), Prof. Shivamma D, Assistant Professor, Dept. of CSE (Data Science).

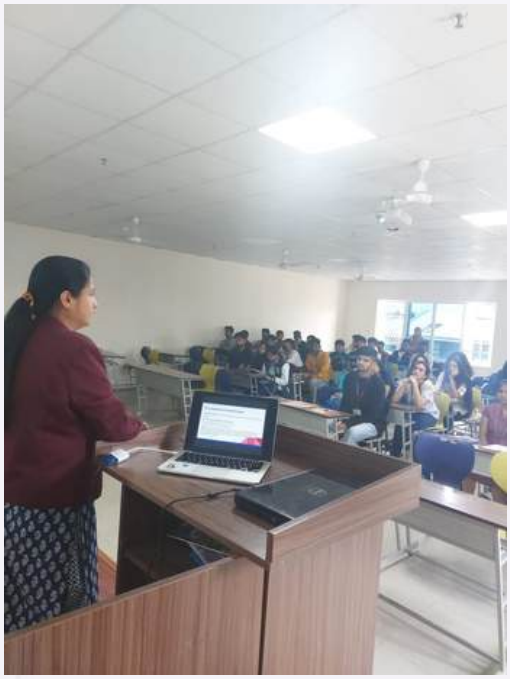
Onam, the vibrant and culturally significant festival of Kerala, is a time of joyous celebration that typically spans ten days. The festival usually falls in the Malayalam month of Chingam, around August or September. A central element of the celebration is the creation of intricate flower rangolis called Pookalams, which adorn the entrance of homes and public spaces, showcasing the artistic skills and unity of the community. The grand Onasadya feast, featuring an array of traditional vegetarian dishes, serves as a symbol of abundance and togetherness, bringing families and communities closer. Cultural performances like Kaikottikali and Pulikali add an element of entertainment and showcase the rich cultural heritage of Kerala.

The boat races (Vallam Kali) are another highlight, reflecting the state's maritime legacy. Overall, Onam is a vibrant tapestry of tradition, community, and cultural pride. In contemporary times, Onam celebrations continue to evolve, with the inclusion of modern elements and technology. Social media platforms play a role in spreading the festive spirit, and various cultural events and competitions add dynamism to the festivities. While embracing these changes, the essence of Onam, rooted in Kerala's history and mythology, remains a testament to the state's enduring cultural heritage, bringing people together in the spirit of joy, unity, and tradition.

**The Takeaways of the event are:**

1. Onam offers students a holistic learning experience encompassing culture, history, art, and values.
2. It encourages them to appreciate diversity, maintain a connection to their roots, and celebrate the importance of community and tradition.

# WORKSHOP ON
# "INK AND INSIGHT: AN ART OF CRAFTING RESEARCH PAPERS AND THESIS"
# 04TH SEPTEMBER, 2023

The DataScience@DSU Club, the Department of CSE (Data Science) organized a workshop on "Ink and Insight: An Art of Crafting Research Papers and Thesis" held on 4th September 2023 organized by Dr. Kakoli Bora, Associate Professor, Dept. of CSE (Data Science), and Prof. Shahwar Ara Kamal S, Assistant Professor, Dept. of CSE (Data Science).

The Speaker was in house faculty. Dr. Kakoli Bora gave an insight on how to write research papers. The session started with an introduction to the different technical documents like scientific paper, user manuals, whitepapers, and about journal and conference papers. The speaker discussed the procedures to be followed and each component of a research paper.
At the end of the event an evaluation was carried out and the students submitted great feedback.

**The Takeaways of the event are:**

1. Introduced to conference and journal paper publication
2. Got to know different types of technical writing
3. Understood the steps to follow while writing technical papers
4. Introduced to the key components of a technical paper
5. Steps to be followed while submitting a paper

# "STUDENT NAAC CONNECT: BRIDGING AWARENESS"
# 04TH SEPTEMBER, 2023



The Department of CSE (Data Science) organized an awareness program on "Student NAAC Connect: Awareness Program" held on 4th September 2023, from 11:30 AM to 01:00 PM organized by Dr. Shaila S G, Professor & Chairperson, Dept. of CSE (Data Science), Dr. Kakoli Bora , Associate Professor, Dept. of CSE (Data Science).

The Speaker in-house faculty Dr. Kakoli Bora gave an insight on understanding of NAAC (National Assessment and Accreditation Council), its role in assessing and accrediting higher education institutions, and its significance in maintaining quality education.

**The Takeaways of the event are:**

1. Understanding of NAAC
2. Quality Assurance Knowledge
3. Accreditation Process
4. Institutional Improvement
5. Best Practices
6. Recognition and Career Development

# DOODLE ART COMPETITION
# "DOODLEART: DSU LIVE THE DREAM"
# 15TH SEPTEMBER, 2023



The DataScience@DSU club, Department of Computer Science Engineering (Data Science) in association with CSI has successfully organized a Doodle Art competition "Doodle Art: DSU live the dream" on the occasion of Engineer's Day held on 15th September, 2023 by the in house faculties. The organizers of the event were Dr. Kakoli Bora, Associate Professor, Dept. of CSE (Data Science), Prof. Vaishali Bagewadikar, Assistant Professor, Dept. of CSE (Data Science) and Prof. Shahwar Ara Kamal S, Assistant Professor, Dept. of CSE (Data Science).

The event was inaugurated by Dr. Shaila SG, Professor and Chairperson, CSE(DS), SoE, DSU. She has given an insight of the significance of Engineers day and about the event. The students from CSE and CSE(DS) participated in the doodle art competition. The theme of the art was DSU live the dream. The students were very happy to get a chance to participate in the event.

Total 8 teams took part in the competition. The judges selected the top 3 teams based on their creativity, uniqueness and cleanliness.

At the end of the event an evaluation was carried out and the students submitted great feedback.

**The Takeaways of the event are:**

1. Introduction to engineers day's significance
2. Role of Sir M Visveswaraya in creating the modern India

# "DATA SCIENCE FUTURES: ELEVATE YOUR CARRIER IN PLACEMENTS "
# 08TH SEPTEMBER, 2023


The DataScience@DSU Club, the Department of CSE (Data Science) organized a workshop on "Data Science Futures: Elevate your carrier in Placements" held on 8th September 2023 organized by Prof. Shivamma D, Assistant Professor, Dept. of CSE (Data Science), and Prof. Manjula M, Assistant Professor, Dept. of CSE (Data Science).

Mr. Vijay Kumar, Deputy Director, Placement and Skill Development, SoE DSU gave an insight on resume building, body language, communication, and responses to common interview questions.

**The Takeaways of the event are:**

1. Guide them on creating a professional and consistent personal brand.
2. Provide insights into different industries and job roles.
3. Teach interpersonal skills, teamwork, adaptability, and problem-solving abilities.
4. Encourage students to pursue certifications or additional training in areas of interest.
5. Help students build their online presence through LinkedIn profiles and personal websites.

**Resource Person:** Vijay Kumar
Placement Director SoE, DSU

# "SYNERGIZING DATA SCIENCE: COLLABORATIVE APPROACHES FOR COMPLEX PROBLEMS"
# 22ND SEPTEMBER, 2023



The Datascience@Dsu Club, The Department Of Cse (Data Science) Organized A Workshop On "Synergizing Data Science: Collaborative Approaches For Complex Problems" held on 22nd September 2023 organized by Prof. Monish L, Assistant Professor, Dept. of CSE (Data Science), and Prof. Manjula M, Assistant Professor, Dept. of CSE (Data Science).

Mr. Amruth Raj and Mr. Arun Kumar, Founder & CEO of Nikki.Build has an IT experience of 15 Years and worked in IT and Banking sector, with a German company gave an insight on building prototypes in low cost and joy of building the models with low code with existing built in the libraries.

**The Takeaways of the event are:**

1. Guide them on creating a professional and consistent personal brand as an entrepreneur.
2. Provide insights into different industries-based prototypes.
3. Incorporate interpersonal skills, adaptability, and problem-solving abilities in rapid prototype building.
4. Encourage students to implement Industry 5.0 human machine interaction models in areas of interest.

**Resource Person:** Mr. Arun Kumar, Founder & CEO, Nikki.Build
Mr. Amruth Raj, Founder, Nikki.Build

# "PRE-PLACEMENT TRAINING - CIL TRAINING"
# 06TH OCTOBER, 2023


The DataScience@DSU club, Department of Computer Science Engineering (Data Science) has successfully organized a "Pre Placement Training" on 6th October, 2023 organized by Dr. Shaila S G, Professor and Chairperson, Dept. of CSE(Data Science), Prof. Manjula M and Prof. Monish L, Assistant Professor, Dept. of CSE (DS).

The targeted audience was 3rd year students of the Department of CSE (Data Science). The session was organized in offline mode. Around 45+ students were attended the session

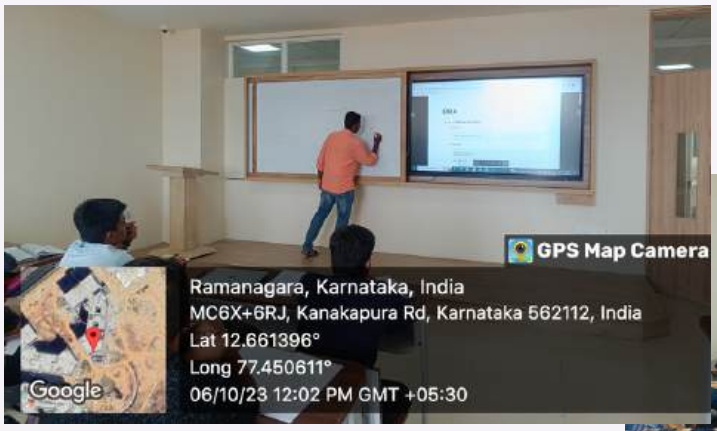
The Placement Event held on October 6th aimed to prepare participants for the challenges of job interviews and career development. The event featured a comprehensive program that included informational sessions, motivational talks, and interactive activities.

**Event Highlights:**

- Interview Preparation: A key focus of the event was to provide attendees with guidance on how to face interviews confidently.
- Motivational Speeches: Impactful motivational speeches were delivered by inspirational speakers. These talks focused on how to face failures, stay resilient in the face of adversity, and build self-confidence. The speakers emphasized the importance of perseverance and a positive mindset.
- Interactive Activities: Blind Drawing Activity: Participants engaged in a unique activity where they were blindfolded and tasked with drawing shapes based on verbal descriptions. This exercise emphasized effective communication and teamwork.
- Interest and Strengths Assessment: Another interactive activity helped individuals identify their interests and strengths, helping them determine the career domains that align with their passions and abilities.
- Skills Enhancement: Throughout the event, attendees were exposed to a range of skills essential for successful job placements. These included time management, problem-solving, teamwork, and effective presentation skills..

The Placement Event was an enlightening experience for all students. It provided practical insights into interview preparation, personal development, and career planning. The interactive activities allowed participants to put their learning into practice, fostering a dynamic and engaging atmosphere. The event was an invaluable stepping stone toward future success in the professional world.

# "CODE-A-THON : C SHAPING THE FUTURE THROUGH INNOVATION"
# 5TH AND 6TH OCTOBER, 2023





The Codechef Club, the Department of CSE (Data Science) organized a workshop on "CODE-A-THON C Shaping the Future Through Innovation" held on 5th-6th October 2023 organized by Prof. Shivamma D, Assistant Professor, Dept. of CSE (Data Science).

The targeted audience was 3rd B.Tech students. The workshop consisted of a multitude of topics supported by hands-on sessions, handled by faculty experts from the Department of CSE (Data Science) and student coordinators. The main highlight of the event was students taught. The Student coordinator team included Janardhan K S, Sherlyn Rose, Kovarthana, Sujeeth Kumar, Pavan kumar, Sahana R, Sindu and Nitin Prajwal R

The event started with Introduction to C programming given by Prof. Shivamma D and topics like Arrays, pointers, Functions, Structures, Union, Memory Management were taught by the student coordinators anardhan K S, Sherlyn Rose, Kovarthana, Sujeeth Kumar, Pavan kumar, Sahana R, Sindu and Nitin Prajwal R respectively. Followed by a session ending quiz to test the students' knowledge. The session has proven to be very inspiring and informative for the students.

**Education goals:**

- ·Understanding the basics of C programming
- ·To be able to implement basic C programs
- ·Understand the programming logic behind every program
- ·Introduction to competitive programming

**Learning achievements:**

- ·Students got a basic idea about c programming
- ·The presentation was incorporated sample programs and followed by practice problems
- ·Practiced advanced C programming
- ·Students learnt optimized coding

# "ABHYUDAYA"
# CREATIVITY, TALENT, AND SKILLS OF THE YOUTH
# 26TH OCTOBER, 2023


The DataScience@DSU Club, the Department of CSE (Data Science) organized a Non-Technical Event "Abhyudaya"- Creativity, Talent, and Skills of the Youth, Singing And Debate Competition held on 26th October 2023 organized by Dr. Shaila S G, Professor and Chairperson, Dept. of CSE(Data Science), Prof. Shivamma D and Prof. Monish L, Assistant Professor, Dept. of CSE (DS).

The event was tailor-made for third-semester B.Tech students, featuring both Singing and Debate competitions with AI Ethics as the debate topic, revealed just five minutes before the event's commencement.

**Judge:** Dr. Kiran B. Malagi, Chairmen, Dept of CSE (Cyber Security)

Objective: To provide a comprehensive understanding of AI ethics and foster students' skills in both singing and debate through engaging competitions.
Key takeaway: To gain a deeper understanding of AI ethics and develop their singing and debate abilities in a dynamic and challenging environment.

**Winners of the event**

Debate Competition:

- Venkat Nivas Reddy K.
- Job Jomy
- Vinuraj Vamshi
- Arian Kovacs

Singing Competition:

- Venkat Nivas Reddy K.

# DIYA ILLUMINARE: "DESIGNING LIGHT AND BEAUTY"
# DESIGNING LIGHT AND BEAUTY
# 3RD NOVEMBER, 2023



The DataScience@DSU Club, the Department of CSE (Data Science) organized a Diya Illuminare: "Designing Light and Beauty" Designing Light and Beauty held on 3rd November 2023 organized by Prof. Shivamma D, Assistant Professor, Dept. of CSE (Data Science). The targeted audience was B.Tech students (all Branches).

Deepawali' – a festival of light and happiness, symbolizes the victory of good over evil, brightness over darkness and truth over falseness. This festival helps people to find moments of joy and happiness amongst their jam pack daily routine. The most traditional and closer to heart way to celebrate this festival is by lighting diyas and candles. Enlighting this festival through diyas symbolizes the supremacy and consequence of brightness over darkness.

In a way of giving a warm welcome to this festival, Department of CSE (DS) had organized a competition of Diya Illuminare: "Designing Light and Beauty" on 3rd November, 2022. A total of 53 teams had participated in this activity from 1st and 3rd semester. Students had used their creative ideas for beautiful and colorful decoration of both diya, symbolizing light and prosperity. The students have painted, decorated and made enticing diyas as a part of Deepawali celebration. They experienced the effort involved in decorating diya and also its significance in this festival of light and joy.

Evaluation of their creative ideas was a tough task for the judges. To evaluate the efforts of students Dr Meenakshi Malhotra, Professor of CSE and Dr.V. Sreemathy, Assistant Professor - Technical English were invited for judgment.

This competition was organized under the guidance of Prof. Shivamma D, Assistant professor. Students were positively motivated by Dr. Shaila S G, Professor and Chairperson, Dept. of CSE (Data Science).

**Outcome :**
The students got aware of the culture and traditions of this specific festival called "Deepawali". They acquired knowledge on the importance of making diyas and lightening all over to celebrate the victory of Lord Rama. They learnt how to make diyas more enticing and attractive by painting and colouring.

**No. of participants:** Total 177 students were enrolled for this competition to participate in this activity.

**Winners of the event:**

1st Place: Vaishnavi N M and Usha DK
2nd Place: Thrisha P, Raksha U and Pragna G
3rd Place: Manoj G Sanningammanavar, Anoop pola and Girish

# "UNIFYING DATA SCIENCE: COOPERATIVE STRATEGIES FOR TACKLING COMPLEX PROBLEMS"
# 6TH NOVEMBER, 2023


The DataScience@DSU Club, the Department of CSE (Data Science) organized a workshop on "Unifying Data Science: Cooperative Strategies for Tackling Complex Problems" held on 6th Nov 2023 organized by Prof. Monish L, Assistant Professor, Dept. of CSE (Data Science), and Prof. Manjula M, Assistant Professor, Dept. of CSE (Data Science).

The session was graced by the esteemed presence of Mr. Arun Kumar, the Founder and CEO Nikkibuild, who shared his wealth of knowledge and experience on how to prepare for a successful career in industry as an entrepreneur. The session commenced with an overview of the dynamic data science landscape.

A rapid prototype building with low code for industry 5.0 Interaction with every line of coding which makes learning more practical and creative. As the agenda of industry 5.0 for Human machine collaboration is implemented in more than 20 models were demonstrated in the session, such as working of Zomato, self-driving JCB model, oximeter, touch less controls.

Some applications demonstrated to students

- Air drop application using common zoom in and out application
- Easy speech interaction using Anyang library,
- Data collection from Bluetooth made easy using BLE (Bluetooth low energy) library
- Vehicle performance prediction with low cost
- Gesture control with low cost using media.pi library
- Tracking of vehicle in Zomato and Swiggy using leaflet library

Arun Kumar Sir emphasized the rapid growth and ever-increasing demand for prototypes with low cost and affordable across various industries. He delved into the crucial aspect of creating a easy going model for the layman. He provided valuable insights into what employers look for in a data science candidate's, including highlighting key skills, projects, and achievements. His tips on skill development and future as were particularly enlightening.

The session concluded with a glimpse into the promising future that awaits data science enthusiasts. Mr. Arun Kumar spoke about the myriad of career paths as an entrepreneur and opportunities that data science offers.

The session left the students motivated and well-prepared for their journey ahead. Armed with invaluable insights from him, they are now ready to embark on their data science careers with confidence, equipped with the knowledge and skills to thrive in the corporate world.

We extend our heartfelt gratitude to Mr. Arun Kumar for his illuminating session and look forward to more such enriching experiences as we continue our quest for excellence in data science in collaboration with Nikki.Build.

**Resource Person:** Mr. Amruth Raj and Mr. Arun Kumar, Founder & CEO of Nikki.Build, Bangaluru.

# WORKSHOP ON "DATA ANALYTICS AND ARTIFICIAL INTELLIGENCE APPLICATIONS USING MATLAB-SIMULINK" NOVEMBER 2ND TO DECEMBER 28TH, 2023

In association with DataScience@DSU Club and MathWorks, the Department of CSE (Data Science) at DSU recently organized a five days of workshop on "Data Analytics and Artificial Intelligence Applications using MATLAB-Simulink." The event, held from November 2nd to December 28th, 2023, was spearheaded by Dr. Shaila S G, Professor and Chairperson, along with Prof. Shivamma D, Assistant Professor, and Prof. Monish L, Assistant Professor, from the same department. The workshop targeted 3rd-semester B.Tech students specializing in Data Science.

Around 50+ students were attended the workshop and completed the Onramp courses on MATLAB Fundamentals, Machine Learning and Image Processing.

**Objectives:**

- To introduce participants to the fundamentals of data analytics, artificial intelligence, and the relevance of MATLAB-Simulink in these domains.
- Enable participants to apply machine learning algorithms and AI techniques using MATLAB-Simulink through practical exercises and projects
- Illustrate real-world applications of data analytics and AI through case studies, demonstrating how MATLAB-Simulink has been instrumental in solving industry challenges.

**Outcome :**

- Participants will gain practical proficiency in utilizing MATLAB-Simulink for implementing data analytics techniques and basic artificial intelligence algorithms.
- To apply learned concepts through hands-on exercises, enabling them to develop and execute small-scale data analytics and AI projects.
- To enhance the problem-solving skills and an understanding of how MATLAB-Simulink can be employed to address real-world challenges in industries leveraging data analytics and artificial intelligence.

## CONTD.

Day 1: 2nd November, 2023

The workshop began with Mr. Avinash, the resource person, taking the participants on a fascinating journey through the world of data analytics and artificial intelligence in both industry and academia. He then delved into the technical aspects of MATLAB, skillfully guiding the participants through its interface and functionality. The Live Script feature was a standout, providing an interactive and dynamic platform for learning and documentation. Mr. Avinash's ability to simplify complicated concepts laid a strong foundation for the rest of the workshop.

Avinash's discourse continued with a meticulous explanation of MATLAB operations, including matrix management and visualization techniques. He highlighted creating evenly spaced vectors and implementing conditional statements within MATLAB, fostering a tangible understanding among the participants. His hands-on approach and articulate presentation laid a solid groundwork, nurturing a palpable enthusiasm among the participants for the intricate possibilities of MATLAB and its practical applications in data analytics and artificial intelligence.


Day 2 : 20th November, 2023: Deep Dive into Data Visualization with Mr. Rakshith

On the second day of our program, Mr. Rakshith, the resource person, provided an in-depth look at data visualization. The session on visualizing data and importing unstructured data highlighted his expertise in MATLAB's varied functionalities. The participants were introduced to the wide array of visualization tools available in MATLAB, enabling them to effectively represent complex data sets visually for better understanding. Additionally, Mr. Rakshith demonstrated how MATLAB's flexibility in handling various data formats allows for the manipulation and extraction of insights from diverse data sources. Through his methodical approach and hands-on demonstrations, attendees gained practical skills essential to handling and visualizing data using MATLAB with confidence.

## CONTD.

Day 3: 1st December, 2023 - Discovering Data Analytics and Artificial Intelligence with MATLAB-Simulink

During this session, we began with an introduction to importing and exporting images, which set the stage for subsequent image transformations. As the presentation progressed, the focus shifted to image enhancement, where we learned techniques for refining image quality and adjusting key parameters to improve visualization. We then moved on to image thresholding, which showed how to convert grayscale images into binary ones to delineate object boundaries. Edge detection algorithms were next on the agenda, as we explored methods for accurately identifying and outlining edges, which are crucial for feature extraction. Finally, we delved into morphological operations, demonstrating how operations like dilation and erosion manipulate image structures. To conclude the session, captivating application demos were shared, highlighting the practical implications of image processing and its profound impact across diverse industries such as medical imaging, computer vision, and quality control.


Day 4 : 7th December, 2023 of the Immersive Journey into Machine Learning: Delving Deeper into the Foundational Pillars

On the fourth day of the immersive journey into machine learning, participants explored the foundational pillars of this transformative field. The session began with an insightful exploration of machine learning's essence, highlighting its significance in enabling computers to learn patterns and autonomously make decisions.

The day's focus then shifted to unsupervised learning, where participants delved into the power of algorithms to discern hidden patterns within unlabeled data. This broadened everyone's understanding of how machines identify intrinsic structures without explicit guidance.

Classification and regression problems were also discussed, highlighting the divergent yet complementary roles they play. The session showcased the art of categorizing data into predefined classes through classification, and regression's ability to predict continuous outcomes. Various algorithms like Support Vector Machines and Linear Regression were used as examples, illustrating their practical applications across industries.

Finally, the day culminated in captivating application demos, showcasing the practical marvels of machine learning across diverse domains. Overall, day four unveiled the multi-faceted landscape of machine learning, empowering participants with foundational knowledge and a glimpse into its vast applications.

## CONTD.

Day 5 : 28th December, 2023 of Machine Learning Immersion: A Deep Dive into Neural Networks and Transfer Learning.

On the fifth day of our immersive machine learning program, we explored the complex world of deep learning. Our session began with an in-depth introduction to the intricate architecture of neural networks and their ability to analyze complex patterns from datasets. Participants then learned about the practical application of pre-trained networks and how they can accelerate learning and adapt to new datasets, emphasizing the potency of transfer learning for swift model adaptation across domains.

We addressed the challenges of managing extensive data collections by teaching effective preprocessing and organization techniques crucial for fortifying model efficacy. Participants also learned about transfer learning, which emerged as a transformative strategy that leverages knowledge from one domain to enhance model performance, particularly in scenarios with limited data availability. Additionally, we underscored the significance of feature extraction, revealing methodologies to distill critical features that enhance model accuracy and efficiency.

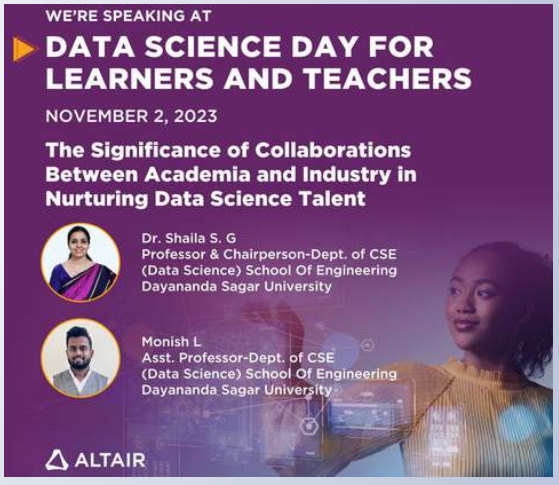
The session concluded with engaging MATLAB Apps demonstrations, simplifying intricate workflows from data preparation to model deployment. We highlighted the practical applications of deep learning in image and speech recognition, natural language processing, and autonomous systems across diverse industries.

# GLIMPSES OF THE EVENT

# FACULTY ACHIEVEMENTS

**Dr. Shaila S G**
**Professor and Chairperson**
**Department of CSE (Data Science)**

- Selected as Galactic Problem Solver for NASA Space Apps Challenge 2023 in the International Hackathon organized by NASA during 7th and 8th October, 2023.
- Participated "CoreEL Edu Summit 2023" on Powering AI System Simulation in collaboration with MathWorks & AMD-Xilinx held on November 28th 2023
- Presented a Tech Talk on ALTAIR DATA SCIENCE DAY organised by Altair, Bangalore on 2nd November 2023.




## Research Publication

- **Shaila Sg**, Siddharth Sargunaraj, Sumana Sg, Monish L and Rajesh Tm (Accepted) - "Video Analytics based Action Recognition using 3D and R(2+1)D Convolutional Neural Networks" in International Conference on Advances in Computational Intelligence (ICACI-2023), Springer.
- Monish L, **Shaila Sg**, Monika Us and Sumana Sg (Accepted) - "Emotion Recognition based on the Fusion of EEG-ECG Data using Ensemble Algorithms" in International Conference on Advances in Computational Intelligence (ICACI-2023), Springer.
- Gurudas Vr, **Shaila Sg**, Joycelita Dias, Monish L and Sumana Sg (Accepted) - "Multi-Region Breast Cancer Detection: Leveraging Deep Learning for Texture and Shape Feature Analysis" in International Conference on Advances in Computational Intelligence (ICACI-2023), Springer.

# FACULTY ACHIEVEMENTS

**Dr. Kakoli Bora**
**Associate Professor**
**Department of CSE (Data Science)**

- Attended a "15 Best Practices Meet 2023" on 22nd August 2023, organised by IIIT-Bangalore and DSCI.

**Prof. Shivamma D**
**Assistant Professor**
**Department of CSE (Data Science)**

- Achieved certification in "Micro-Certification - Welcome to ServiceNow" and earned 5 badges in ServiceNow on the 5th August, 2023.
- Certified as a Academic Instructor to deliver the Application Development Fundamentals at ServiceNow on 26th October 2023.
- Selected as Galactic Local Mentor, Galactic Problem Solver, Local Award winner and Global Nominee for NASA Space Apps Challenge 2023 in the International Hackathon organized by NASA during 7th and 8th October, 2023.
- Participated "CoreEL Edu Summit 2023" on Powering AI System Simulation in collaboration with MathWorks & AMD-Xilinx held on November 28th 2023
- Completed the course on MATLAB Onramp organised by MathWorks on 4th December 2023.
- Participated 5 Days Faculty Development Program(FDP) on "Building Advanced Data Analytics Application with cloud" organised by EY, AICTE and edunet under Next Gen Employability Program from 11th December 2023 - 15th December 2023

**Reviewer**

- Reviewer for AICTE Sponsored IEEE International Conference on "Networks, Multimedia and Information Technology (NMITCON)" organised by Nitte Meenakshi Institute of Technology, Bengaluru INDIA on 1st and 2nd September 2023.
- Reviewer for International Conference on "Evolutionary Algorithms and soft Computing Techniques" organised by RVITM" Bengaluru INDIA on 20th and 21st October 2023.

# FACULTY ACHIEVEMENTS

### Research Publication

- R. D. Lohith, Shivamma. D, Manju Swaroop V, Sukrutha S Rao and Sukrutha G, "Rat Swarm Optimization and Machine Learning Algorithms for Accurate Leukemia Diagnosis via Gene Expression Analysis," 2023 14th International Conference on Computing Communication and Networking Technologies (ICCCNT), Delhi, India, 2023, pp. 1-5, doi: 10.1109/ICCCNT56998.2023.10307762.

**Prof. Monish L**
**Assistant Professor**
**Department of CSE (Data Science)**

- Presented a Technical Talk on “ALTAIR Rapid Miner Workshop” on 29th August 2023, organised by Dept. of MCA, DSATM
- Presented a Tech Talk on ALTAIR DATA SCIENCE DAY organised by Altair, Bangalore on 2nd November 2023.

### Research Publication

- Shaila Sg, Siddharth Sargunaraj, Sumana Sg, **Monish L** and Rajesh Tm (Accepted) - “Video Analytics based Action Recognition using 3D and R(2+1)D Convolutional Neural Networks” in International Conference on Advances in Computational Intelligence (ICACI-2023), Springer.
- **Monish L**, Shaila Sg, Monika Us and Sumana Sg (Accepted) - “Emotion Recognition based on the Fusion of EEG-ECG Data using Ensemble Algorithms” in International Conference on Advances in Computational Intelligence (ICACI-2023), Springer.
- Gurudas Vr, Shaila Sg, Joycelita Dias, **Monish L** and Sumana Sg (Accepted) - “Multi-Region Breast Cancer Detection: Leveraging Deep Learning for Texture and Shape Feature Analysis” in International Conference on Advances in Computational Intelligence (ICACI-2023), Springer.

# FACULTY ACHIEVEMENTS

**Prof. Vaishali B**
**Assistant Professor**
**Department of CSE (Data Science)**

- Attended a Faculty Development Program on "AWS Cloud Essentials ", from 9th August - 14th August 2023, organised by Department of CSE, SOE, DSU
- Attended a "15 Best Practices Meet 2023" on 22nd August 2023, organised by IIIT-Bangalore and DSCI.

**Prof. Shahwar Ara Kamal S**
**Assistant Professor**
**Department of CSE (Data Science)**

- Attended a "15 Best Practices Meet 2023" on 22nd August 2023, organised by IIIT-Bangalore and DSCI.

# STUDENT ACHIEVEMENTS


**Vinuraj Vamshi, Rudra Narayan Chetty and R D Lohith,** selected has a Local Award winner for **"Best use of Technology"** for **NASA Space Apps Challenge 2023** in the International Hackathon organized by NASA under the guidance of **Prof. Shivamma D** during 7th and 8th October, 2023.

- **Lohith R D, Pranav S, Manju Swaroop and Sukrutha G** selected has a **"Global Nominee" for "NASA Space Apps Challenge 2023"** in the International Hackathon organized by NASA under the guidance of **Prof. Shivamma D** during 7th and 8th October, 2023.

- **Sheetal P, Nandhini S and Srinivas K** selected has a **"Global Nominee"** for **"NASA Space Apps Challenge 2023"** in the International Hackathon organized by NASA under the guidance of **Prof. Shivamma D** during 7th and 8th October, 2023.

- **Abhishek N, Golla Pujari Sowmya and Abhishek A** selected has a **"Galactic Problem Solver"** for **"NASA Space Apps Challenge 2023"** in the International Hackathon organized by NASA under the guidance of **Dr. Shaila S G and Prof. Shivamma D** during 7th and 8th October, 2023.

- **Venkat Nivas Reddy K, Job jomy, Vinuraj Vamshi and Arian Kovacs** 3rd Semester have won the 1st place in the "Abhyudaya"- Creativity, Talent, and Skills of the Youth, Debate Competition organised by the Department of Computer Science and Engineering (Data Science) on 26th October, 2023

- **Venkat Nivas Reddy K,** 3rd Semester have won the 1st place in the "Abhyudaya"- Creativity, Talent, and Skills of the Youth, Singing (Solo) Competition organised by the Department of Computer Science and Engineering (Data Science) on 26th October, 2023

- **R. D. Lohith, Shivamma. D, Manju Swaroop V, Sukrutha S Rao and Sukrutha G**, "Rat Swarm Optimization and Machine Learning Algorithms for Accurate Leukemia Diagnosis via Gene Expression Analysis," 2023 14th International Conference on Computing Communication and Networking Technologies (ICCCNT), Delhi, India, 2023, pp. 1-5, doi: 10.1109/ICCCNT56998.2023.10307762.

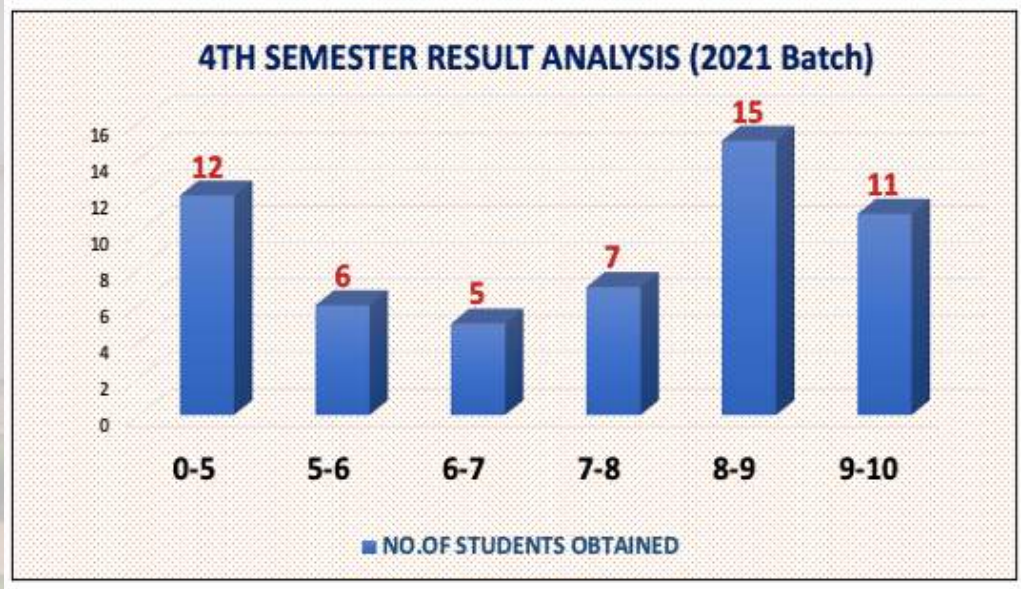
- **Dhanusha R, Hritikka N and Akhil Reddy V (7th Semester)** have completed the CAD certification organised by ServiceNow

# RESULT ANALYSIS

## 4TH SEMESTER TOPPERS (2021 BATCH)

| USN | NAME | SGPA |
|---|---|---|
| ENG21DS0002 | ABHISHEK.A | 9.88 |
| ENG21DS0003 | ABHISHEK.N | 9.72 |
| ENH21DS0013 | CHAITRASHREE.P | 9.44 |
| ENG21DS0035 | SAMMANA BHAVANI PRASAD | 9.44 |
| ENG21DS0046 | V.NIVAS REDDY | 9.44 |
| ENG21DS0020 | GOLLA PUJARI SOWMYA | 9.4 |
| ENG21DS0006 | AKSHAYA.B | 9.32 |
| ENG21DS0044 | THILAK.R | 9.28 |
| ENG21DS0039 | SHUBHAM KUMAR | 9.2 |
| ENG21DS0045 | USHASHREE.N | 9.16 |

## 4TH SEMESTER RESULT ANALYSIS (2021 BATCH)

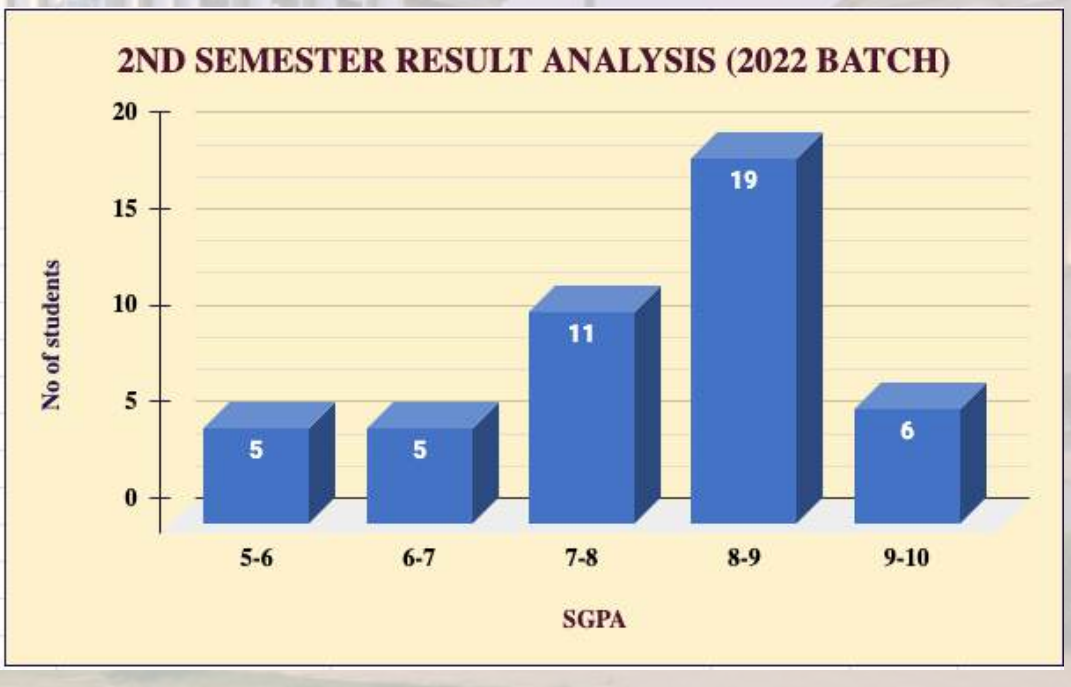


# RESULT ANALYSIS

## 2ND SEMESTER TOPPERS (2022 BATCH)

| SL NO | USN NO | NAME | SGPA |
|---|---|---|---|
| 1 | ENG22DS0039 | NITIN PRAJWAL | 9.52 |
| 2 | ENG22DS0040 | PAVAN KUMAR G | 9.43 |
| 3 | ENG22DS0010 | R SINDHU | 9.29 |
| 4 | ENG22DS0017 | SANJANA T | 9.24 |
| 5 | ENG22DS0024 | VIRIKA OLIVIA SOANS | 9.14 |
| 6 | ENG22DS0015 | SAHANA S M | 9.1 |
| 7 | ENG22DS0029 | HIT KARAN SINGH RATHORI | 8.95 |
| 8 | ENG22DS0049 | ARIAN KOVACS | 8.95 |
| 9 | ENG22DS0019 | SUJEETH KUMAR D S | 8.86 |
| 10 | ENG22DS0023 | VINITH K M | 8.86 |

## 2ND SEMESTER RESULT ANALYSIS (2022 BATCH)



# EDITORIAL COMMITTEE


**Faculty Co-ordinator**

**Prof. Shivamma D**
Assistant Professor
Department of CSE (Data Science)
SOE, DSU

**Student Co-ordinator**

Nitin Prajwal R
3rd Semester, CSE (DS)

DAYANANDA SAGAR UNIVERSITY

SCHOOL OF ENGINEERING

Department of Computer Science and Engineering
(Data Science)
Dayananda Sagar University
School of Engineering, Devarakaggalahalli, Harohalli, Kanakapura Road,
Ramanagara Dt., – 562 112

# PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

PEO1. Knowledge delivery in terms of analytics and visualization, research, design, product implementation and optimization by using modern tools and techniques of data science to provide absolute resolution in social aspects.

PEO2.Applying strong mathematical and statistical foundations of Data Science to build powerful knowledge models to generate actionable insights, necessary for making data-driven decisions in multi-disciplinary areas.

PEO3. Function effectively as competent Data Science Professionals, Entrepreneurs or Researchers in the work place or maintain employment through lifelong learning including professional certifications.

# PROGRAM OUTCOMES (POS)

PO1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2. Problem analysis: Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3. Design / development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

PO6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues, and the consequent responsibilities relevant to the professional engineering practice.

PO7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

## PROGRAM SPECIFIC OUTCOMES (PSOS)

PSO1. Apply the principles of Data Science including Data Visualization, Data Management and Data Security for building intelligent predictive models for solving real world problems.

PSO2. Apply Business Analytics, Visualization Tools & Statistical Tools acquired through professional society, certification programs, projects, Internship & Laboratory exercises to solve critical problems.

## CONTACT US

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