



DAYANANDA SAGAR
UNIVERSITY



SCHOOL OF
ENGINEERING

SOE - "The Weekly Buzz"

The Official Weekly Newsletter of **School of Engineering**



Week#31 (July 29 to Aug 03, 2024)

www.dsu.edu.in

SCHOOL OF ENGINEERING

VISION

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

MISSION

- Design and deliver contemporary engineering curricula to address regional and global needs while emphasizing ethics, values, integrity and regional relevance.
- Carryout high impact academic research, industry projects and innovation activities with active student engagement to advance science and engineering knowledge and state-of-the art industry practices.
- Develop regional and national leaders to advance the society and economy.

Partnership and collaboration with Industry

Department of MECH

Department of Mechanical Engineering, SoE- DSU has signed an MOU with Government Tool Room Training Center (GTTC) -Kanakapura on 02-08-2024 at Block-A , DSU -Main Campus Harohalli.

An MoU with GTTC-Kanakapura provides access to advanced manufacturing technologies and expertise, facilitates collaborative research and development, and enhances students' practical skills through industry exposure and training programs.

Department of CSE (CY)

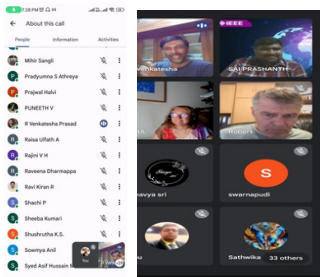
Department of Computer Science and Engineering (Cyber Security), Dayananda Sagar University, has signed an MOU with SISA Information Security Pvt. Ltd., Bangalore on 31st July, 2024. SISA signed this MoU to establish a Center of Excellence in Cyber Security within the university premises. This partnership will provide DSU students with hands-on training, skill development, stipends, and potential employment opportunities. Additionally, students can access SISA's proprietary Purple Range Platform, which offers cutting-edge resources and training. This initiative will not only support national employment goals but also align with the vision of Viksit Bharat by 2047, ensuring that students are well-prepared to meet the future demands of the Cyber Security industry. The MoU was signed by the Founder & CEO of SISA, Dharshan Shanthamurthy, and the Vice Chancellor of Dayananda Sagar University, Prof. (Dr.) Amit Bhatt.



Faculty Contributions

Department of CSE (CY)

- Dr. Durbadal Chattaraj attended IEEE Communication Society Panel Discussion on “Benefits and Opportunities in ComSoc, Future Scope in Communications Industry, and Member Mentoring feasibilities” with Prof. (Dr.) Robert Schober, Prof. (Dr.) Ana Garcia Armada, and Prof. (Dr.) Ranga Rao Venkatesha Prasad on 30-07-2024 between 8:00 PM to 9:00 PM.
- Dr. Durbadal Chattaraj attended IEEE Communication Society “Board of Governors” meetings with Prof. (Dr.) Ranga Rao Venkatesha Prasad on 01-08-2024 between 7:00 PM to 8:30 PM.
- Prof. Ranjima P has successfully completed National awareness quiz on NEP-2020 organized by Department of Computer Science and Department of Management Studies at AMAR SHAHEED BABA AJIT SINGH JU JHAR SINGH MEMORIAL COLLEGE, BELA.
- Prof. Ranjima P has actively participated in the webinar on “Significance of Innovation in Engineering Education” organized by department of Civil Engineering under the guidance of IIC-GCE, Ramanagara, Karnataka on 29.07.2024.
- Prof. Ranjima P has participated in a faculty development programme on “Generative AI Models and Applications of Machine Learning” organized by department of Information Science and Engineering, School of Computer Science and Engineering, JAIN (Deemed-to-be University) on 22 to 27 July, 2024.



Department of Computer Science & Technology

- Dr. M Shahina Parveen has published a research article titled “Software Testing Using Cuckoo Search Algorithm with Machine Learning Techniques” in the Journal of Intelligent Systems and Internet of Things, Springer publications with the volume no. 13, Issue no. 2 in July 2024.
- Dr. M Shahina Parveen has reviewed a paper at the 2024 International Conference on Distributed Computing VLSI Electrical Circuits and Robotics (IEEE Conference) on July 28, 2024.
- Prof. Ramandeep Kaur has published a research article titled “Hybrid YSGOA and neural networks-based software failure prediction in cloud systems” in the Scientific Reports, Springer publications in July 2024.
- Prof. Ramandeep Kaur completed FDP on "Empowering Educators in Intellectual Property Rights" organized by Padmashree Institute of Management and Sciences in collaboration with Karnataka State Council for Science and Technology (KSCST), Bengaluru and Visveswaraya Trade Promotion Centre (VTPC), Bengaluru from 26th July to 01st August 2024.

Department of CSE (AI&ML)

Dr. Mude Nagarjuna Naik, Dr. Shreyas Rajendra Hole & Prof. R Sriram Kumar, Assistant Professors, Dept. of CSE(AI&ML) has attended and participated in the IEEE ARIIA 2024-Pre conference E-Workshop on “Mastering IEEE Paper Writing: Guidelines, Tips, and best Practices” on 30th July 2024.



Department of CSE

Dr. George Fernandez I, Associate Professor, has successfully completed the online course on the module “How to write an abstract and improve your article (40 minutes)” on 29th July, 2024. Presented by Elsevier Researcher Academy and the resource person is Hannah Foreman.

Dr. George Fernandez I, Associate Professor, has actively participated in the Faculty Development Program on “Advanced Data Modeling and Visualization with power BI” held from 22nd July to 27th July, 2024 organized by Department of Information Technology, VNR Vignana Jyothi Institute of Engineering and Technology, Hyderabad, India.

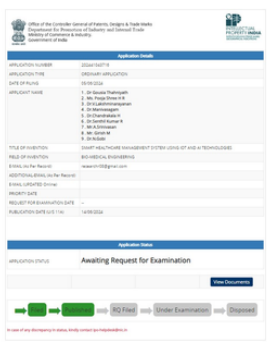
Prof. Suvika K V, Assistant Professor, has successfully completed the online course on Infosys Springboard platform titled “Clustering, Errors, and Validation” on July 29, 2024.

Dr. Gousia Thahniyath and Prof. Pooja Shree H R, Assistant Professors, Department of CSE has published a patent with the title “SMART HEALTHCARE MANAGEMENT SYSTEM USING IOT AND AI TECHNOLOGIES” in the month of June 2024 by IP India.

Ms. Kulkarni Manjusha Manikrao, Research Scholar and Dr. Savitha Hiremath, Associate Professor, Department of CSE are Published a Research Article in International Journal of Computing and Digital Systems (IJCDs), an open-access, peer-reviewed, Scopus indexed, Q3 Journal and the paper is accepted for publication with the title “Survey on Recommender Systems for Market Analysis using Deep Learning” in the month of July 2024.

Dr. Revathi V, Associate Professor, and Prof. Ramandeep Kaur, Research Scholar, Dept. of CSE published a research paper titled “Hybrid YSGOA and neural networks-based software failure prediction in cloud systems” has been successfully published with Springer Nature in Scientific Reports (Q1 journal) in July 2024 with DOI

<https://doi.org/10.1038/s41598-024-67107-5>.



scientific reports

OPEN Hybrid YSGOA and neural networks based software failure prediction in cloud systems

Ramanpreet Kaur¹ & Kavitha Varthiyayan^{2*}

In the realm of cloud computing, ensuring the dependability and robustness of software systems is paramount. The intricate and evolving nature of cloud infrastructures, however, presents substantial challenges in the pre-emptive identification and rectification of software anomalies. This study introduces an innovative methodology that amalgamates hybrid optimization algorithms with Neural Networks (NN) to enhance the prediction of software malfunctions. The core objective is to augment the predictive accuracy of neural networks under operational conditions. This is accomplished through the integration of three distinct optimization techniques: the Yunglish Gorilla Optimizer (YGOA), which is instrumental in the fine-tuning of neural network parameters; the Genetic Algorithm (GA), which is employed for the systematic exploration of search spaces related to software failures; and the enhanced optimization algorithm (EAO), which is used for the final optimization of the model. The features are then processed by Neural Networks (NN), incorporating their proficiency in deciphering intricate data patterns and dependencies. The NNs are trained by the hybrid optimization algorithm to predict the occurrence of software failures. Our evaluation, conducted using the Failure Dataset (GitHub) and the IEEE CMC Software, demonstrates that the hybrid optimization strategy employed for feature selection significantly curtails complexity and expedites processing.

Keywords: Software failure detection, Deep learning, Feature selection, Optimization, Cloud computing

Cloud computing has emerged as a dominant paradigm in the modern era, providing scalable and flexible computing resources to meet the demands of various applications and services. As cloud computing continues to expand its reach across industries, the complexity and scale of cloud infrastructures have grown exponentially, presenting unique challenges in ensuring the reliability and availability of these systems. Software failures in cloud environments can have significant consequences, leading to service disruptions, data loss, and financial losses. Therefore, it is crucial to develop effective methods for predicting and preventing software failures in cloud systems. This study introduces a hybrid approach that combines the strengths of Yunglish Gorilla Optimizer (YGOA), Genetic Algorithm (GA), and Neural Networks (NN) to enhance the predictive accuracy of software failure prediction models. The YGOA algorithm is used for the fine-tuning of neural network parameters, while the GA algorithm is employed for the systematic exploration of search spaces related to software failures. The EAO algorithm is used for the final optimization of the model. The features are then processed by Neural Networks (NN), which are trained by the hybrid optimization algorithm to predict the occurrence of software failures. Our evaluation, conducted using the Failure Dataset (GitHub) and the IEEE CMC Software, demonstrates that the hybrid optimization strategy employed for feature selection significantly curtails complexity and expedites processing.

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Department of CSE (Data Science)

The Faculty Development Programme on High-Performance Computing (HPC) and Parallel Programming was held from 29 July to 2 August, 2024, at C-DAC, Electronic City, Bengaluru. Dr. Shaila S G, Professor and Chairperson of the Dept. of CSE (DS), participated in this event.

This 6th FDP hosted by C-DAC focused on various topics, including HPC, parallel programming, GPU programming, cloud computing, AI/ML for HPC, and information security. The program featured hands-on sessions, expert talks, and practical demonstrations.



Prof. Shivamma D, Assistant Professor completed the certification on “Machine Learning Fundamentals” on July 30, 2024 organized by Infosys’s Springboard.

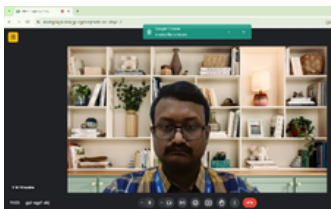


Departmental Activities

Android Application Development

Department of Computer Science and Technology connected Value added course, with the intention of instilling knowledge of Android's Development Environment, introducing Android SDK to the students, imbibing knowledge of User Interfaces, inculcating techniques to use Intents and Services and to throw light on Storing and Retrieving Data in Android, a 30-hour Value Added Course on Android Application Development was organized for the final year students of Computer Science and Technology, during the summer vacation in the Hybrid mode.

The zoom and google meet links were shared with the students to make use of the sessions online. 42 Students registered for the course and completed the course. The course covered Theory and Hands on sessions to cater the needs of final year project needs of the students. Starting from the basics of JAVA and object-oriented concepts, the course covered the Android Studio Environment and developing the android applications using Kotlin. The Chair Person identified the area of interests for the students and assigned the task of taking up the Value-Added Course on Android Application Development to Prof. Vinayaka V M, Assistant Professor, Dept. of CST.

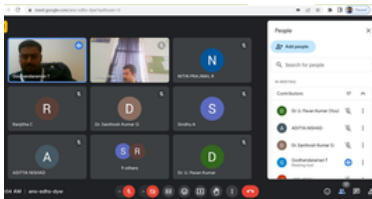


Innovations in Encryption and Data Security

The Department of CSE (Data Science) organised the workshop "Cryptography in Action: Innovations in Encryption and Data Security" on 29th July, 2024 at 10:00am to 01:00pm aimed to provide participants with an in-depth understanding of the latest advancements in cryptographic techniques and their practical applications in securing data.

The event brought together industry experts, researchers, and enthusiasts to discuss the evolving landscape of encryption and data security.

The workshop "Cryptography in Action: Innovations in Encryption and Data Security" successfully delivered valuable knowledge and practical skills related to modern encryption techniques. The diverse range of topics covered, from current innovations to future trends, equipped participants with a comprehensive understanding of the field. The hands-on sessions further ensured that attendees could apply what they learned in practical settings.



"Emerging Trends in AI and Data Science in Healthcare"

"Emerging Trends in AI and Data Science in Healthcare" held on 30th July, 2024 to 31st July 2024 at 10:00 AM- 11:00 AM organized by Dr. Shaila S G, Professor and Chairperson CSE(DS), Prof. Shivamma D, Assistant Professor, Dept. of CSE(Data Science) and Prof. Monish L, Assistant Professor, Dept. of CSE(Data Science). More than 50+ students have been registered for the event.

Over 50 students joined the session and learned about AI algorithms in personalized medicine that analyze genetic and clinical data to tailor treatments to individual patients, increasing effectiveness.

The event successfully highlighted the transformative impact of AI and Data Science in healthcare, inspiring participants to explore and contribute to this rapidly evolving field. The knowledge gained from the session underscored the importance of these technologies in shaping the future of medical care, emphasizing the need for continued innovation and ethical considerations to maximize their benefits.



Student Activities

Department of CSE (Cyber Security)

Mr. A Akhelesh (USN-ENG21CY0004), Mr. T Goutham (USN-ENG21CY0046), Ms. P Kishanthini (USN-ENG21CY0021) & Ms. E Swetha (USN-ENG21CY0014) students from Department of Computer Science and Engineering (Cyber Security), have been selected for the Internship Project: “Advanced Threat Hunting” from SISA Information Security Pvt Ltd.



Chairman CS <chairman-cs@dsu.edu.in>

RE: DSU - Advanced Threat Hunting Internship Drive - 26th July,2024 @SISA SDC
1 message

SISA Pranav Salian <pranav.salian@sisainfosec.com> Mon, Jul 29, 2024 at 2:55 PM
To: Chairman CS <chairman-cs@dsu.edu.in>, Vijay Kumar <vijaykumar@dsu.edu.in>
Cc: SISA Faisha Sayad <faisha.sayad@sisainfosec.com>, SISA Mahendran Chandramohan <mahendran.chandramohan@sisainfosec.com>, SISA Ajay Thomas <ajay.thomas@sisainfosec.com>, SISA Ajit Venigala <ajit.venigala@sisainfosec.com>, SISA Sarthosh Kumar <sarthosh.kumar@sisainfosec.com>, SISA Anitha V <anitha.v@sisainfosec.com>

Hello All,

Following are the names of students who have been selected for the internship project – Advanced Threat Hunting:

1. Kishanthini P
2. Akhelesh A
3. T Goutham

Thanks and Regards,



Department of Computer Science & Technology

Ms. Vandhana (USN-ENG21CT0046) & her team won 2nd place in the Innovation Think Tank Capacity Building Program, which focused on sustainable healthcare systems of tomorrow and event was hosted by Siemens Healthineers in Bengaluru from July 22 to 31.



Department of Aerospace Engineering

- Mr. Nischal Kumar K S (USN-ENG21AS1008), appointed as Trainee Engineer at Sika Interplant System limited like to thank placement department, Dayananda Sagar University for their support.
- Ms Kashvi Vadi (USN-ENG22AS0043), III year student at Dayananda Sagar University completed internship for 2 weeks at Deccan Charters PVT Ltd.

Mentored by Prof. Sripad Kulkarni, Assistant Professor, Dept. of Aerospace.



REF No SI/PS 2/02/24-25

24.07.2024

Mr Nischal Kumar K S,
A-1, Fortuna Serenity, 6th D cross,
Rajgadpura, CV Ramen Nagar
Bangalore - 560093.

Dear Sir,

Re: Appointment as Trainee Engineer - Sales.

With reference to your application dated 8/07/2024 and the subsequent interview you had with us on 16.07.2024. We are pleased to appoint you as **Trainee Engineer - Sales**.

Employee shall execute a service contract agreeing to serve the Employer. The Employer will retain the original Educational Certificates of SSC, diploma, and BE of the Employee till the expiry of the contract period (2 years) and for which arrangement the Employee would accept the same. Employee shall return the original Education certificate on Expiry of the contract period (2 years). This letter is being issued in duplicate so as to return the copy duly signed by you as a token of acceptance and return the same to us by 26/07/2024 and to sign the Agreement.

The above offer is subject to your joining us on or before **01.08.2024** and the appointment order expires automatically thereafter.

You shall produce at the time of joining all certificate and testimonials in original.

Thanking you,

For SIKA INTERPLANT SYSTEMS LTD.


Rajeev Ranjan
VP - HR & Admin

CONFIRMATION & ACCEPTANCE

I have read and understood the terms of appointment order. I accept the same. I will be reporting for duty on 01.08.2024.

Place: Bangalore.
Date: 24/07/2024


Signature of the employee



DCPL/OSU-STIS-Kashvi-02
23 JUN 2024

Dear Kashvi Vadi (ENG22AS0043)

Subject: Completion of Internship at Deccan Charters Pvt. Ltd.
Refer: DSU/ProJ/ASE/2023-24/08 dated 24/05/2024 from Shri Dr. Nagaraja S.R and our offer letter dated 26 JUN 2024

We are pleased to inform you that you have successfully completed the internship in our organisation from 08 JUN, 2024 to 22 JUN, 2024 and had active sessions and briefed on below topics:

- Occupational Health and Safety practices
- Aircraft maintenance practices
- Visit to Avionics Shop
- Visit to Wheel and Brake Shop
- Supply Chain and stores processes
- Parts storage and usage, certificate requirements
- Aircraft servicing record maintenance practices etc.

We wish you all the best for the future personal and professional endeavours.

Thanking you
For Deccan Charters Pvt. Ltd.

Raghuveera Nellithaya
Head-Logistics

 Digitally signed by Raghuveera
Nellithaya, Head Logistics
Date: 2024.07.22 12:54:48 +05'30'

Raghuveera Nellithaya
Head - Logistics



**SCHOOL OF
ENGINEERING**

**Edited by :
Office of Dean SOE,
Dayananda Sagar University
Deverakaggalahalli, Kanakapura Road Ramanagara Dt.,
Karnataka - 562 112**