

SMRITI

Department of
Computer Science and
Engineering

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EDITORIAL DESK

Warm Greetings to all SMRITI readers. This issue consolidates the accomplishments and remarkable works that happened in the department during the months of May, June and July.

We are delighted to have got approval from AICTE for the M.Tech Integrated programme commencing from this academic year. The department congratulates our colleague, Dr. S. Angel Deborah for receiving her supervisorship from Anna University.

We appreciate the efforts of Dr. D. Venkata Vara Prasad, Dr. J. Suresh, Dr. Balasubramanian V and Dr. Dhannya in organizing the regional round of iTech Hackfest 2023 in association with SAP, India and PSG Institute of Technology and Applied Research.

The National Board of Accreditation team visited the department on 16th and 17th June 2023 to audit the M.E CSE programme. Following the NBA visit the department worked together for the M.Tech Integrated programme curriculum and presented the same in the Board studies meeting held during the month of July.

Our students are always keen about achieving greater heights. This period has witnessed many such laurels. We extend our heartfelt appreciation to Deepak Sriram, Harshavardhan Suresh, and Kiran Raj of third year for participating in the national level round of ICPC 2023 during the month of May. We also take pleasure in appreciating our students Swetha J, Sathvika V S and Vishvasri J S of second year for bagging the first place in the seventh edition of VIVID. Seven teams led by our department students qualified for the next round of iTech Hackfest 2023.

Whether it be contests or internships, the students are striving hard to upgrade their skills to be employable. In that way, we are glad to see our students who have got internships at MotorQ, CDAC Natwest, Fidelity Investments, Paypal, KLA- Tencor, Citibank, Rocketlane, University of Calgary and IISc Bangalore.

The department accommodated six high school students from across TamilNadu during a period of two weeks as part of SHAPE 2023. This provided a platform to kindle the spirit of high schoolers to learn new technologies in the area of computer science.

This quarter was filled with enthusiastic achievements from students and faculty. These achievements make us foresee many more laurels to come.

SMRITI Editorial Team

EXTERNAL INTERACTIONS AND RECOGNITIONS

Invited Lectures

1. Dr. R. Kanchana acted as a resource person for the 2-day FDP on “Outcome Based Education” at K Ramakrishnan College of Engineering organized by its IQAC on 18th and 19th May 2023. Nearly 60 faculty members participated and gave good feedback.
2. Ms. Lakshmi Priya S, delivered a lecture on "R Programming" during the FDP on Software Tools using Mathematical Computation jointly organized by Department of CSE and Department of Mathematics, Muthayammal Engineering College, Tamil Nadu on 06-06-2023.
3. Dr. Mirnalinee T T delivered a lecture on Outcome based Education for the One Week Online Faculty Development Program on “Outcome Based Education for Effective Learning and Teaching” during 19th July 2023. at AMET university.

Board of Studies Meeting

1. Dr. Mirnalinee T T attended the BOS meeting on 20th May 2023 of KSRTC.
2. Dr. Mirnalinee T T attended the 6th BOS meeting at Manakula Vinayagar Engineering college on 20th July
3. Dr. Chitra Babu attended a special Board of Studies meeting on the 25th July 2023 convened by the Director, Academic Courses, Anna University to discuss Introduction of Skill based courses in the curriculum of University Departments (R2019) and Non Autonomous Affiliated Colleges (R 2021) to be offered in Semester V and Semester VII.

DC Members

1. Dr. Mirnalinee T T, served as a DC member for the scholar Ms. Srijayanthi scholar of Dr. Sethujjarasi, RMK Engineering college
2. Dr. Kavitha S., attended a DC meeting at VIT, Chennai on 14.06.2023 in online mode.
3. Dr. S. Saraswathi attended the First DC meeting for the candidate Mrs. Gettha T, of SRM Valliammai Engineering College, on 26-07-2023 virtually.

External Examiners

1. Dr. R. Kanchana acted as external examiner for the Project Viva-Voce of UG students in the Department of IST, CEG, Anna University, Chennai on 2nd June 2023
2. Dr. Saraswathi S served as an External Examiner for MCA Project Viva Voce Examination at CEG Anna University.

Session chair

Dr. Thenmozhi, served as a session chair for the fourth International Conference on Information Systems and Software Engineering on 6.5.2023 organised by Meenakshi Sundararajan Engineering College, Kodambakkam, Chennai

ACM India

1. Dr. Chitra Babu as Program Committee Chair of ACM India Annual COMPUTE conference attended the meeting with the PC Chairs of the co-located conference CompEd - Andrew and Michelle on 12th June 2023.
2. Dr. Chitra Babu as PC chair of ACM India COMPUTE 2023 attended a meeting on 19th June 2023 with conference chair Viraj Kumar, organizing chair at university of Hyderabad - Durga Bhavani and the conference chair of CompEd - Venkatesh Chopella to discuss the potential program schedule and logistics.

Indian Institute of Science(IISc), Bangalore

Dr. Yogesh Simmhan, Associate Professor, Department of Computational and Data Sciences, Indian Institute of Science, Bangalore was invited to deliver a guest lecture titled “Distributed Systems Research across Edge and Cloud” on 31st May 2023 for the II year UG and I year PG students. Subsequently, during his discussion with our faculty members Dr. T. T. Mirnalinee, Dr. Chitra Babu and Dr. V. Balasubramanian, a noteworthy development emerged as Dr. Yogesh expressed his willingness to offer paid internships to deserving students. In this regard, 35 enthusiastic students from our department applied for this internship, and following an exhaustive interview process, a total of 9 outstanding students were selected to partake in this opportunity, each receiving a stipend of Rs. 15000.

Anna University, Chennai

Dr. S. Angel Deborah received her supervisor recognition from Anna University on 27th June 2023.

INDUSTRY COLLABORATION

Valeo, Chennai

Dr. T. T. Mirnalinee, Dr. R. Kanchana, Dr. S. Saraswathi, Dr. S. Rajalakshmi, Dr. K. R. Sarath Chandran, and Dr. H. Shahul Hameed, had discussions regarding the projects with Mr. Jayanta Panda of Valeo, Chennai on 3rd May 2023.

Intel, Bangalore

Dr. R. Kanchana coordinated with Mr. J. Ashok, Intel, Bangalore and arranged for an expert teacher talk. Mr. Ashok delivered 9 hours of lectures in online and physical mode in the course on “Computer Organization and Architecture” for the II year students of UG from 10th to 26th May 2023. Dr. D.V.V. Prasad and Dr. K. Lekshmi were responsible for the logistics of the sessions and the speaker.

Caterpillar, Chennai

Dr. Chitra Babu along with Dr. T.T. Mirnalinee, Dr. K.R. Sarath Chandran and Dr.S. Rajalakshmi visited the Caterpillar office at World Trade Centre(WTC) Brigade building on the Old Mahabalipuram Road. Mr. Bhuvan Ananthakrishnan, Country Manager provided a tour of their special advanced facilities. The team also had a discussion with the technical team of Caterpillar regarding the problem statements for possible collaboration.

1. Predicting the depth from the images.
2. Battery life Optimization
3. Designing chatbot
4. Digital twin for predicting the health of machines
5. Optimal allocation of resources

HCLTech, Chennai

1. On 7th July 2023, Dr. Arun Janarthanan, Technology Director and Engineering, Practice Head -EdTech Business, HCLTech, Chennai delivered a talk on “First principles Thinking: from Device Physics to Software ” to the UG First year students. Dr. R. Kanchana and Dr. S. Angel Deborah, organized the event.
2. The Green Networking Initiative idea was proposed by Dr.H.Shahul Hamead to HCL Research. In sequence to that, three rounds of discussions have happened during July and August.. Manjunatha Subbannachari, Hayagrivan Balaji S, Karthikeyan S, Vijayakumar Paleru, Bosco Andrew Vittal Raj M, Srinivasan Kuppusamy, Vijayanand Gejji, Soumyashree Bhanjdeo and Somya Agarwal from HCL team had interacted with the Head of the Department Dr.T.T.Mirnalinee and Dr. Shahul. During the first meeting, Dr.Shahul has elucidated the need for Green Networking by illustrating the global energy consumption pattern in telecom sectors in the last two decades. He has also narrated the essence of incorporating greenness and their benefits with the modern technologies like AR/VR, Drones, Cloud, Deep Learning, Blockchain and Big Data. During the second meeting, the HCL team invited us to propose a sample topology and experimental setup that can be implemented and tested at HCL. During the third meeting, technical aspects of Green Networking were explained to the HCL team and an experimental setup was also suggested for implementation. Currently the HCL team is reviewing our idea.

PUBLICATIONS

Journal Publications

1. S. Kavitha, G. Raghuraman, published a paper titled “Smart Parking System with Dynamic Pricing Model”, INDIAN JOURNAL OF SCIENCE AND TECHNOLOGY, Vol:16, issue:18. Clarivate:Zoological Record.
2. D Thenmozhi, A Kalaivani, NC Kabilasudhan, J Rajeshwaran, Pratyush Nepal, published a paper titled “Efficient Human Activity Monitoring Using Feature Based Deep Learning Techniques”, Lampyrid, Vol:13, issue:1.
3. Kanchana Rajaram Amma, N.G.B. Selvakumar, S, published a paper titled “Convolutional neural network based children recognition system using contactless Fingerprints”, International Journal of Information Technology, Scopus,IF:SJR 0.44 (Q2)
4. Kanchana Rajaram V. Dhayanidhi Harikrishnan Srikrishnan P. Aadithyan, published a paper titled “A Benchmark to ensure End-to-End Exactly-Once-Semantics in Stream Processing”, Indian Journal of Natural Sciences, Vol:14, issue:78,Clarivate,IF:IF 2.452 WoS, Q4
5. Kavitha Srinivasasn, Sainath Prasanna, Rohit Midha, Shraddhaa Mohan, published a paper titled “Federated Learning Framework for IID and Non-IID datasets of Medical Images”, EMITTER International Journal of Engineering Technology, Vol:11, issue:1,Clarivate.
6. Thenmozhi D, Kalaivani A, Research Scholar, Manickam L, Aadithya Hariharan A N, published a paper titled “Chatbot for Educational Institution”, BioGecko, Vol:12, issue:3,Clarivate.
7. Swetha Saseendran, Sathish Prasad Vetrivel Thanalakshmi, Swetha Prabakaran, R. Priyadharsini, published a paper titled “Analysis of player tracking data extracted from football match feed”, Romanian Journal of Information Technology and Automatic Control, Vol:33, issue:2,Clarivate.
8. Karthik Desingu, Daniel Mark Isaac, Mirunalini P., Bharathi B., and Cherry Mathew Philipose, published a paper titled “LocateMyBus: IoT-Driven Smart Bus Transit”, in Journal Of Communications Software and Systems, Vol:19, issue:2, Scopus, IF:0.215.

Book Chapter / Book series

Dr. Chamundeswari A., Vishal, Ramdhanush, published a book chapter titled "Recent trends in IoT as part of Digital India" in "IGI publication ", Vol:-, Pages:36-50

Conference Presentations / Publications

1. Dr. Thenmozhi D, Pranith P, V Samhita, D Sarath, published a paper titled "Homophobia and Transphobia Detection of Youtube Comments in Code-Mixed Dravidian Languages using Deep learning", CEUR, Volume: 3395, Pages:117-123, May 2023.
2. Durairaj Thenmozhi, C Jerin Mahibha, S Kayalvizhi, M Rakesh, Y Vivek, V Poojesshwaran published a paper titled Paraphrase Detection in Indian Languages Using Deep Learning, Springer CCIS, Volume: 1802, pp. 138-154, June 2023
3. Dr. Thenmozhi D along with Charangan Vasantharajan, Ruba Priyadharshini, Prasanna Kumar Kumarasen, Rahul Ponnusamy, Sathiyaraj Thangasamy, Sean Benhur, Kanchana Sivanraju, Anbukkarasi Sampathand Bharathi Raja Chakravarthi published a paper titled TamilEmo: Fine-grained Emotion Detection Dataset for Tamil, Springer CCIS, Volume: 1802, pp. 138-154, June 2023
4. Rajalakshmi Sivanaiah, Nishaanth Ramanathan, Shajith Hameed, Rahul Rajagopalan, Angel Deborah Suseelan, and Mirnalinee Thanka Nadar Thanagathai published a paper titled " Fake News Detection in Low-Resource Languages", In: , et al. Speech and Language Technologies for Low-Resource Languages . SPELLL 2022. Communications in Computer and Information Science book series, vol 1802. pp 324–331, Springer, Cham, May 2023. https://doi.org/10.1007/978-3-031-33231-9_23.
5. C. Jerin Mahibha, C.M.Swaathi, R.Jeevitha, R.Princy Martina, Durairaj Thenmozhi published a paper titled "Brainstormers_msec at SemEval-2023 Task 10: Detection of sexism related comments in social media using deep learning" in SemEval 2023 during July 2023.

SCHOLAR INFORMATIONS

1. Dr. J.Suresh conducted the Synopsis Approval meeting for his full-time research scholar, Ms. R. Kiruthigha on 05.05.2023
2. Dr. Mirnalinee T T convened the synopsis meeting of Ms Benisha on 12.06.23.
3. Dr. Mirnalinee T T convened the synopsis meeting of Ms R. Vidhya on 30.06.23.

FUNDED PROJECT APPLIED

Project title: Knowledge distillation framework for detection of anomalous activity in public places, PI: Dr. Bhuvana J, along with the mentor Dr.V, Masilamani, Associate Professor and HOD, Department of Computer Science and Engineering, Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram Funding Agency: Indian National Science Academy visiting scientist scheme. Duration 6 months, Budget:Rs.1,80,000

PAPERS REVIEWED

1. Dr. K. R. Sarath Chandran reviewed a paper on 21/05/2023 for the International Journal Displays (Elsevier).
2. Dr. Beulah A. reviewed a paper for Circuits, Systems & Signal Processing (CSSP) Springer journal on May 22, 2023.
3. Dr. Rajalakshmi S. reviewed one paper for the Journal of Supercomputing on May 13, 2023
4. Dr. Rajalakshmi S. reviewed three papers on May 31, 2023 for the AICTE Sponsored IEEE International Conference on Networks, Multimedia and Information Technology (NMITCON) organized at Nitte Meenakshi Institute of Technology, Bengaluru, INDIA during 1st and 2nd, September 2023 in association with IEEE Bangalore Section.
5. Dr. Beulah A. reviewed two papers for Journal of Intelligent & Fuzzy Systems.
6. Dr.S.Rajalakshmi is acting as program committee member and reviewed two papers on June 28, 2023 for the IEEE INTERNATIONAL CONFERENCE ON ARTIFICIAL INTELLIGENCE IN ENGINEERING AND TECHNOLOGY (IICAJET 2023) to be held on 12-14 September 2023, Kota Kinabalu, Sabah, Malaysia.
7. Dr. Saraswathi S reviewed 5 papers for the International Conference on Advances in Artificial Intelligence & Machine Learning in Big Data Processing (AAIMB-2023) on 29-6-2023.
8. Dr. S. Angel Deborah reviewed two papers for ACM Transactions on Asian and Low-Resource Language Information Processing on 19th June 2023
9. Dr. S. Angel Deborah reviewed a paper for Soft Computing, Springer on 21st June
10. Dr. Rajalakshmi S reviewed a paper for Soft computing journal on July 24, 2023.
11. Dr. Thenmozhi D reviewed papers for LT-EDI workshop as part of RANLP 2023 conference.
12. Dr. Thenmozhi D reviewed papers for the DravidianLangTech workshop as part of RANLP 2023 conference.
13. Dr. Rajalakshmi S. reviewed two papers on July 14, 2023 for the IEEE International Conference on Integrated Intelligence and Communication Systems (ICIICS–2023) organized by Sharnbasva University, Kalaburagi, Karnataka to be conducted on 24 & 25 November 2023.

EVENTS ORGANIZED

1. A guest lecture on “ State of AI and its business applications” by Mr. Kumar, Head of Delivery Excellence, Acies Global, Chennai was organized on 8th May 2023 for the III year UG students. It was organized by Dr. R. Kanchana and Dr. K. Lekshmi
2. A guest lecture on “Distributed Systems Research across Edge and Cloud” by Dr. Yogesh Simmhan, Associate Professor, Department of Computational and Data Sciences, Indian Institute of Science, Bangalore was organized on 31st May 2023 for the II year UG and I year PG students. It was organized by Dr. Chitra Babu, Dr. R. Kanchana and Dr. K. Lekshmi
3. Dr. R. Kanchana and Dr. Angel Deborah organized a guest lecture on First principles Thinking: from Device Physics to Software by Dr. Arun Janarthanam, Technology Director and Engineering, Practice Head - EdTech Business, HCLTech, Chennai on 7th July 2023. Students from BE I year, ME I year, PG Certificate program in Business Analytics and Data Science, SACE attended the talk and reaped the benefits.
4. Dr. Balasubramanian V., Dr. Dhannya, Dr. D.Venkata Vara Prasad, and Dr. J. Suresh, conducted the Regional Hackathon. SAP, India associated with SSN College of Engineering to be the regional partner for conducting National Level Technical Hackathon iTech Hackfest 2023 during 24.8.2023 to 26.8.2023 at PSG Institute of Technology and Applied Research. The regional round was conducted on 6.7.23
5. A virtual open house program was organized, Dr. T. T. Mirnalinee, Dr. R. Kanchana and Dr. J. Suresh presented the salient features of Department of CSE highlighting the Masters program in CSE for the prospective PG candidates.

Shape Internship 2023

SHAPE 2023, the 2-week national school students' internship programme, held during April 24th, till May 5th, 2023. This year, 40 meritorious students from 24 top schools have participated.

On April 24, Shape participants visited the department from 11.45 a.m. to 12.30 p.m. Dr. T.T. Mirnalinee, HoD of our department, briefed us about the department with respect to faculty competency, placements, internships, higher studies, curriculum enrichment programmes,



student activities, and our entrepreneurship in CSE. The following projects were demonstrated very briefly by Dr. S. Angel Deborah and Dr. K.R. Sarath Chandran.

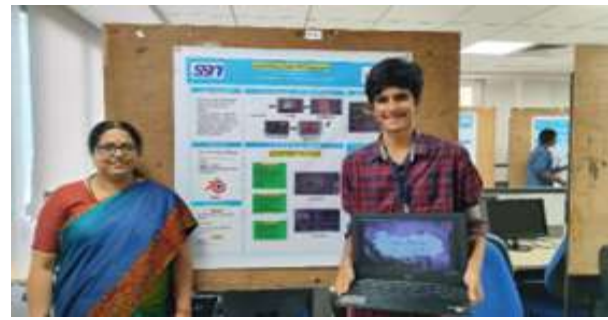
- Home Automation System
- Robotic Hand
- Digital Agriculture
- Heart beat monitoring system
- Human Motion Tracking system

Following Students started their internships in our department from 26.04.2023 to 04.05.2023.

Mentor Name	Student Name	School	Board of Study	Major	Title of the Project
Dr. R. Kanchana	V. Karthik	PSBB, Siruseri	CBSE	Bio, Maths	Animation film Development
Dr. B. Prabavathy	Rakshitha P	VGN Chinmaya Vidyalaya, Avadi	CBSE	Bio, Maths	Matching Game for Fun using HTML5, CSS3 & JavaScript
Dr. K.R. Sarath Chandran	S. Sri Guhan	Sri Sankara Vidhyashram Hr Sec School, Thiruvanmiyur	State Board	Computer Science	Design of IoT-based Home Automation System
Dr. P. Mirunalini	M.Krisanth	P. S. Matric Hr. Sec. School, Mylapore	State Board	Computer Science	Traffic Sign Board Recognition
Dr. S. Angel Deborah	Rathina Velu	Bosco Academy Matriculation School	State Board	Computer Science	Obstacle Avoidance Robot
Dr. H. Shahul Hameed	Rishi Senthilvel	Chettinad Vidhyashram, Raja Annamalaipuram, Chennai	International Board	Bio, Maths	A dashboard to monitor network traffic for home router

During their internship period, students were trained on the respective technologies by the faculty members. Furthermore, they were taught to design the application from fine-grained to coarse-grained. Relevant to that, students were asked to explore and implement the design, which was verified incrementally by the faculty members. Once the implementation was over, students were taught to design the poster, and they were trained to present the project. Finally, posters were

presented on the 2nd floor of the CDC, SSN CE for the project exhibition, and the students presented them successfully to the participants.



First principles Thinking: from Device Physics to Software



The computer Science and Engineering (CSE) department hosted a captivating guest lecture on the 7th of July 2023. The distinguished guest speaker for the event, Dr. Arun Janarthanan, the current Technology Director and Engineering Practice Head of EdTech Business at HCLTech delivered the session leaving an indelible mark on the attending

students.

Dr. Janarthanan is renowned not only for his technological expertise but also for his profound mathematical insights and first principles thinking. He is an accomplished mathematician and an acharya in his field. The lecture commenced with a fascinating exercise that involved Dr. Janarthanan displaying a world map and prompting the students to reflect whether the depicted sizes of the countries represented their true size ratios. This introductory activity not only engaged the audience but also set the stage for the reflection on how appearances can sometimes be deceiving.



The discourse then delved into the history of mathematical concepts, starting with the intriguing origins of zero. Dr. Janarthanan shared insights into the cultural evolution of numerical systems and the lecture seamlessly transitioned to exploring the rationale behind the

measurement of a complete angle as 360 degree, a concise overview of calculus, and the significance of the mathematical constant 'e'.

The guest lecture was a resounding success. Dr. Arun Janarthanan's ability to weave complex mathematical concepts into relatable narratives captivated the audience. One of the key strengths of the lecture was that it introduced the students to the scantily explored realm of first principles thinking. Dr. Janarthanan encouraged the students to delve deeper into the questions that have forever existed but rarely acknowledged.

Today is a time where the world is busily entombed in the land of complexity. This session was indeed imperative to emphasizing the preeminence of simplicity that is being forgotten. The session inspired the students to approach challenges with a renewed perspective and seek understanding at its most fundamental level.

Samah Syed - I Year CSE

Research Interaction with Dr. T. V. Geetha

1. Dr. T.V. Geetha, Distinguished Visiting Faculty held a Research interaction with the CSE and IT Department faculty members on 13th and 21st of July 2023 from 8.30 am - 12.30 pm.
2. Dr. T. V. Geetha, Distinguished visiting faculty held an interdisciplinary research interaction on 21st July 2023 from 1.15 pm to 2.30 pm.



Workshop on “Research Methodology”

Dr.T.V.Geetha, Distinguished Visiting Faculty along with Dr. Angeldeborah S, AP/CSE organized a two day workshop on "Research Methodology" on 27th and 28th July 2023.



Yoga for Wellbeing and Mental Health

The International Day of Yoga is observed annually on 21st June to promote physical, mental, and spiritual wellbeing through the practice of Yoga. To commemorate the day of Yoga, the Workshop on “Yoga for Wellbeing and Mental Health” is organized by Dr. R. Kanchana for the first year UG students during 19-23 June 2023. During the workshop, simple but powerful tools of UPA Yoga offered by Sadhguru, Isha Foundation, Coimbatore which empower people to take charge of their health and wellbeing, were taught.

Benefits of the practices offered include:

- Enhanced focus, memory, and productivity
- Stabilized body, mind, and emotions
- Reduced stress, anxiety, and tension
- Lasting sense of joy, peace, and fulfillment



Everyday a one-hour session from 2.30 to 3.30 pm were arranged for 2 sections of the first year students. The number of participants on each day is given below: A total of 400 students are benefited by the program.

Volunteers from Isha Foundation, Coimbatore were invited, and they made the sessions effective. The practices are incredibly supportive to the student community and It received excellent feedback from the students.

International Day of Yoga

To commemorate the International Day of Yoga, a session on “Yoga for Physical and Mental Health ” was organized by Dr. R. Kanchana for the faculty members, non-teaching staff on 21st June 2023. During the workshop, UPA Yoga tools such as Directional movements, neck practices, Yoga Namaskaram, and Nadi Suddhi offered by Sadhguru, Isha Foundation, Coimbatore were taught. Volunteers from Isha Foundation, Coimbatore enabled the sessions.



National Level Technical Hackathon iTech Hackfest 2023

- regional round



SAP, India, in association with SSN College of Engineering as the regional partner, conducted National Level Technical Hackathon iTech Hackfest 2023 regional round on 6.7.2023. The finals will happen during 24.8.2023 to 26.8.2023 at PSG Institute of Technology and Applied Research, coimbatore.

The road show for the regional hackathon happened on 5th July 2023. The guests from SAP India were Mr. Jayanth Bagare, Director/Chief Development Architect - SAP Academy for Engineering, Mr. Venkatraman, Architect - SAP Academy for Engineering, and Dr. Manimegalai Rajkumar, Head CSE, PSGpartment, Department of CSE, PSG Institute of Technology and Applied Research.

In the regional round a total of 159 teams registered for the hackathon. They participated under the themes:

- Climate Action
- Economic Growth and Job Security
- Equal Access to Education and Opportunities

130 teams participated on that day and 44 teams were shortlisted. 11 Teams from SSN got shortlisted.

Event Youtube: [▶ SSN - SAP iTech HACKFEST National Hackathon Regional Round Road show](#)

Panel Members:

Panel	Name of the Jury	Theme	Number of Teams
Panel 1	Dr. A. Chamundeswari, Professor, CSE, SSNCE	Climate Action	13
	Mr. Vishakan Subramanian, Software Development Engineer, Workato		
Panel 2	Dr. V.S. Felix Enigo, Associate Professor, CSE	Climate Action	15
	Mr. Shashanka Venkatesh, SDE-1 @ Samsung Electronics		
Panel 3	Ms. Poornima, Senior Software Developer, Barclays	Climate Action	13
	Mr. Rahul Venkatesh SDE @ Amazon		

Panel 4	Dr. B. Prabavathy, Associate Professor, CSE	Climate Action	14
	Mr. Ganesh S, Software Developer, Yubi		
Panel 5	Dr. Bharathi B, Associate Professor, CSE	Economic Growth and Job Security	12
	Ms. Sowmya S, Senior Software Developer, Barclays		
Panel 6	Dr. D. Thenmozhi, Associate Professor, CSE	Economic Growth and Job Security	11
	Ms. Harshana Sridhar SDE-2, Amazon		
	Ms. Harini R. Full-stack developer at Citibank		
Panel 7	Dr. S. Saraswathi, Associate Professor, CSE	Economic Growth and Job Security	12
	Dr. P.T.Sharavanan, Technical Lead, Sella India Software Services Ltd		
Panel 8	Dr. K.R. Sarath Chandran, Assistant Professor, CSE	Equal Access to Education and Opportunities	14
	Mr.Seshan Rajendran, Sr. Engineer, Qualcomm		
Panel 9	Dr. S. Rajalakshmi, Assistant Professor, CSE	Equal Access to Education and Opportunities	12
	Mr. Rajthilak Gunasekaran, Asst. Vice President, Barclays		
Panel 10	Ms. S. Lakshmipriya, Assistant Professor, CSE	Equal Access to Education and Opportunities	14
	Ms.Vyshali Sivabalan, Software Developer, IBM, Bangalore		



Winning SSN Teams from this Regional round:

Name of the Team Leader	Team Name	Theme
N Gayathri	Globality	Climate Action
Udanthika Venkatesh	Java lagged	Climate Action
Samyuktaa Sivakumar	KK-PS2000	Climate Action
Vignesh Balaji S	Multiverse	Climate Action
Priyanka Vijaybaskar	CapitalFlowAi	Economic Growth and Job Security
Shravan Sreeram	ARXperience	Equal Access to Education and Opportunities
Alamelu Kannan	FinFit	Equal Access to Education and Opportunities
Rithvikha V	Glitch gurus	Equal Access to Education and Opportunities
Vijai Aravindh R	Lingo Wizards	Equal Access to Education and Opportunities
Johann Sylvester J	Sign Scripters	Equal Access to Education and Opportunities
B. Sasmitha	Yukthi	Equal Access to Education and Opportunities

Winning CSE Teams from this Regional round:

Name of the Team Leader	Team Name	Theme
N Gayathri	Globality	Climate Action
Udanthika Venkatesh	Java lagged	Climate Action
Samyuktaa Sivakumar	KK-PS2000	Climate Action
Vignesh Balaji S	Multiverse	Climate Action
Shravan Sreeram	ARXperience	Equal Access to Education and Opportunities
Alamelu Kannan	FinFit	Equal Access to Education and Opportunities
Vijai Aravindh R	Lingo Wizards	Equal Access to Education and Opportunities

Event Url: <http://www.psgitech.ac.in/itechhackfest2023/>



Dr. D.Venkata Vara Prasad, Dr. J. Suresh,

Dr. Balasubramanian V, Dr. Dhannya

EVENTS ATTENDED

1. Dr. Dhannya S M, attended One Week Online STTP on "AI and Machine Vision for Robotics", organized by the Centre for AI, IoT, and Robotics, IIITDM Kancheepuram from 12 to 16 June 2023.
2. Dr. Prabavathy B., attended Industrial Training on Image Processing held during 19 - 23 June 2023 Organized by EduLakes Solutions LLP In Association with National Service Scheme (NSS) - IIT Roorkee.
3. Dr. Chitra Babu, Dr. B. Bharathi, Dr. D. Thenmozhi, Dr. J. Bhuvana, Dr. S. Kavitha, Dr. S. Saraswathi, Dr. P. Mirunalini, Dr. K. Lekshmi, Dr. R. Priyadharsini, Dr. Y.V. Lokeswari, Dr. V. Balasubramanian, Dr. S. Rajalakshmi, Dr. K.R Sarath Chandran, Dr. N. Sujaudeen, Dr. A. Beulah, Dr. M. Saritha, Dr. H. Shahul Hamead Ms. S. Lakshmi Priya, Dr. S. Angel Deborah, Dr.Dhannya SM attended two days workshop on "Research Methodology" on 27th and 28th July 2023.
4. Dr. Chitra Babu attended the Webinar jointly organized by ACM India and TCS Research on "Generative AI - State of the art and looking ahead" on the 26th July 2023 at 6:30 PM. As a member of the ACM India Learning Initiatives Committee, she was also involved in liaising with the TCS team and publicizing the webinar. The webinar witnessed a record of more than 7000 unique viewers and more than 1500 peak concurrent viewers.

OTHER ACTIVITIES

1. Dr. R. Kanchana, counseled the ten applicants of ME(CSE) program from 20th May to 24th May 2023 and motivated them to pay the fees at the earliest.
2. Dr. R. Kanchana, mentored V. Karthik, PSBB School, Siruseri, Chennai to complete the project on "Animation Film Development " successfully under the scheme SHAPE 2023. The project was showcased on 7th May to the parents and school principals.
3. Dr. Rajalakshmi S., collected the application forms and proofs for Best Outgoing Student, verified the same and attended the meeting for BoS selection on May 3, 2023.
4. Dr. T. T. Mirnalinee, Dr. R. Kanchana and Dr. S. Angel Deborah attended a meeting organized by Dr. Albal, Sace with Dr. Arun Janarthan, HCL. The collaboration opportunities for setting up a center of excellence in AI and ML were discussed. Internship for PG students at HCL and guest lecture for I year students were agreed.
5. Dr. T. T. Mirnalinee, Dr. Chitra Babu, and Dr. Prasad D V V served in SSN UG Management quota interview panel during June 21, 22 and 23, 2023.
6. Dr. B. Bharathi, Dr. J. Suresh, Dr.S.Saraswathi, Dr. S. Saraswathi, Dr. K. Lekshmi, Dr. R. Priyadharsini, Dr. Y.V. Lokeswari, Dr. A. Beulah and Ms. S. Lakshmi Priya was involved as proctor for SSN Management quota Counseling - 2023 held during the months of June and July.
7. Dr. R. Kanchana counseled the applicants of ME(CSE) program from 19th June to 28th June 2023 and motivated them to pay the fees at the earliest.
8. Dr. Prasad D V V, Prof/CSE Conducted technical test and interview to select candidates Lab Assistant posts.
9. Dr. R. Kanchana counseled the applicants of ME(CSE) program from 6th July to 21st July 2023 and motivated them to pay the fees at the earliest.
10. Dr. T. T. Mirnalinee, Dr. R. Kanchana, Dr. Chitra Babu, Dr. D.V.V. Prasad, Dr. P. Mirunalini, and Dr. S. V. Jansi Rani worked on evolving the curriculum of 5-year integrated M.Tech.(CSE) and syllabus of the first two semesters, arranged the BoS meeting on 14th July 2023 and incorporated the suggestions of BoS members.
11. Dr. T. T. Mirnalinee and Dr. R. Kanchana presented the curriculum of 5-year integrated M.Tech.(CSE) to the Principal, Vice Principal, CoE and Prof. S. Ramanagopal on 10th July and received their feedback.
12. Dr. R. Kanchana and Dr. B. Prabavathy contributed to the project active class on the Data Structures course, discussed with Mr. Deepak, learning engineer from IIIT, Hyderabad, and developed active learning elements. In connection with this, Dr. R. Kanchana attended a meeting called by Dr. Albal, SACE to discuss the progress so far, any impediments and implementation plan on 10th July 2023
13. Dr. R. Kanchana and Dr. B. Prabavathy prepared a presentation on a topic in the Data Structures course with several active learning elements and Dr. Prabavathy presented it to the committee on 19th Jul 2023.
14. Dr. Chitra Babu, has been invited to serve as a member of an expert committee constituted by the Director, IIT Madras to provide a report with comments regarding concerns of how using new AI technologies such as ChatGPT impacts education.

15. Dr.H.Shahul Hamead AP/CSE has applied a proposal to obtain travel grants through DST-SERB International Travel Support Scheme for Rs.1,28,000 to attend an International Conference.

BOARD OF STUDIES - DEPARTMENT OF CSE

A new 5-year integrated PG degree program, M. Tech. (Computer Science and Engineering) is approved by AICTE and the students are admitted from the academic year 2023-2024 onwards. The board of studies reviewed the curriculum and syllabus of the first two semesters that was put forth by the department.

The Board of Studies (BoS) of the Department of Computer Science was scheduled on 14th July 2023 from 09.00 AM to 10.30 AM in the Cognizant Open-Source Lab to discuss the 5-year integrated M.Tech. (CSE) curriculum and syllabi for semesters 1 and 2. The following members of the BoS and the faculty members of CSE were present:



1. Prof. T. T. Mirnallinee, Prof. and HoD, CSE, SSNCE, Chairperson
2. Prof. S Chitrakala, Department of CSE, CEG, Anna University, Chennai, University Nominee
3. Prof. Krishna Moorthy Sivalingam, Department of CSE, IIT Madras, Chennai, Academic Expert
4. Prof. Chandrashekar Ramanathan, Professor and Dean (Academics), IIIT Bangalore, Academic Expert
5. Mr Kaarthik Sivakumar, Principal Engineer, Cisco Systems, Chennai, Representative from industry
6. Mr V Sasikumar, Staff Software Engineer, Walmart Global Tech India, Bangalore, Postgraduate alumnus
7. Faculty Members from the department of CSE, SSNCE, Members.



STUDENT ACHIEVEMENTS

Vivid 7.0

Vivid 7.0 is an annual national level project demo competition hosted by the department of information technology of SSN College of engineering. We participated in the 7th edition of this prestigious event and we're thrilled to announce that our team - Infinite Loop (Swetha J, Sathvika V S and Vishvasri J S) bagged the first place across all departments and tracks.

Our winning project showcased an innovative blend of augmented reality and machine learning to revolutionize the way sign language is learnt and taught. We seamlessly integrated it into a groundbreaking personalized instructor web application that interprets real-time sign language gestures and provides an intuitive learning experience to the community of people with speech and hearing impairments.



Leveraging the power of augmented reality (AR), we created immersive learning modules that bring sign language to life in a whole new way.

For many of us, it was our first encounter with AR technology. The journey was filled with challenges and excitement as we dived into uncharted territory. We quickly realized the immense potential of AR to revolutionize the way sign language is taught. Through interactive and visually stimulating experiences, learners can now engage more deeply with the language and

enhance their understanding.

One of the standout features of our project is its integration of deep learning algorithms. The application utilizes RNN with LSTM to analyze and evaluate the user's signing performance, providing personalized feedback and guidance. This intelligent assessment system ensures efficient and effective learning outcomes with almost 90% accuracy, tailoring the experience to each individual user's needs and progress.



We believe that communication is not a luxury but a necessity. Our mission was to develop a tool that would enable individuals to learn sign language at their own pace, fostering independence and inclusivity. This breakthrough technology ensures precise and efficient learning, empowering individuals to master sign language effectively and bridges the gap between spoken words and sign language.



The first round was domain specific and our team was shortlisted as the best project from ML domain and we proceeded to the final round ,for a round of power judging with all the best projects from other domains like Blockchain , IOT and Web development. During the power judging round, we demonstrated a crisp and clear overview of our project with attention to every detail . We had a q/a session which instilled the market value of our web application by making it accessible to a wide range of users across the world.

None of this would have been possible without the invaluable guidance and support of our esteemed mentor, Dr. S. Rajalakshmi. Her expertise and insights were instrumental in optimizing our project and shaping it into a comprehensive learning tool.

ICPC Asia West Continent Finals

The team comprising **Deepak Sriram , Harshavardhan Suresh and Kiran Raj of third year CSE** excelled in the ICPC Amritapuri regional round held in Amrita Vishapeedam Bangalore on 2nd April 2023 and qualified for Asia West Continent Finals. They participated in ICPC Asia West Continent Finals in Mathura on May 19th and 20th, 2023 at GLA University Mathura.

IBM Quantum Spring Challenge

Jeevesh Krishna Arigala of 3rd year CSE participated in the IBM Quantum Spring Challenge, held from 17/05/2023 to 25/05/23, at national level and was the 7th person to complete the challenge globally.

INTERNSHIP @ IISc

Ragul B, Swathika, Vaishnavi S, Jahnvi Murali, Harini Mohan, Sanjai Balajee, Yashasvee, Sanjjit S, and A Mohith of III year CSE students are doing a paid internship with a stipend of Rs.15,000/- under Dr. Yogesh Narasimman, Associate Professor, Department of Computational and Data Sciences, Indian Institute of Science, Bangalore. They are doing a month-long in-person research internship from July 20 to Aug 19, 2023 at the DREAM:Lab of the CDS department at IISc, Bangalore.

INTERNSHIP @ COMPANIES

Name	Company
Akshat Jain	Fidelity Investments
Laxman.D	
V.P.Abishek	
Nishaanth.R	
Niteesh Kumar .N	
Sowmya.K	
Sowmya.G	
Subhashree.M	
Sumon Kumar	
Sarika Esackimuthu	
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Vikash Anand .S	
Akil Karthikeyan	Rocketlane
Cyril melvin Vincent	
Achyuth Anand	
Harshavardhan Su	
Nandakishor V	
M.Dejah	
Shajith Hameed	
Vignesh S.M	Citibank
Vishal	
Aiswarya krishnakumar	
Anumita K P	

Fathima Naushin A R	
P T Jayanmuthan	
Kishaanth S	
Krithika Swaminathan	
Mrithula KL	
Nitheesh Raaja R	
C.Padma Pooja	
P.Pranith	
Ramdhanush.V	
Sabarivasan V	
V.Samhita	
Adithi shankar	
Shruthi.H	
Shruti Sriram	
Siddharth.S	
Supraja Sridhar	
Varsha.S	
Varsha Yeshwanth	
Aishwarya B	
T Geethapriya	
Jeevesh Krishna anugala	Natwest
Vaishnave.J.P	
J.A.Varsha	
Aishwarya K	
Ajay saravanan	PayPal
Shalini .N	
K B Kiran raj	
S Deepak	Motor Q
Vignesh Balaji S	
Divyasri Krishnakumar	CDAC
Gomathy Dhanya S	KLA-Tencor
Saisrinath H Narra	University of Calgary

EXTRA - CURRICULAR ACTIVITIES

Google Developer Student Club Lead

Charumathi of II year has been selected as a Google Developer Student Club Lead for SSN campus!

ALUMNI CORNER

1. Dr. Subalalitha C.N, Associate Professor, Department of Computing Technologies, College of Engineering & Technology, Kattankulathur, M.E CSE Alumni 2006, visited our campus on 4.5.23 and interacted with our faculty. Also, she acted as an external examiner for B.E CSE End semester project review.
2. Dr. Premalatha G, Assistant Professor, Department of Data Science and Business Systems, College of Engineering & Technology, Kattankulathur, M.E CSE Alumni 2010, visited our campus on 5.5.23 and interacted with our faculty. Also, she acted as an external examiner for B.E CSE End semester project review.
3. Ms. Sangeetha S, Senior Software Developer, HCL Technology, Chennai, M.E CSE Alumni 2011, visited our campus on 24.5.23 and interacted with our faculty. Also, she acted as an external reviewer for M.E CSE phase 2 project review.
4. Mr. Rajthilak G, Sr. Manager, Morgan Stanley, India, CSE Alumni 2007, visited our campus with his kids on 10.6.23 and interacted with our faculty and also, he is the guest for NSS event in commemoration of World Cycling Day.

ZEROES AND ONES

How do computers operate? It is widely recognised that computers operate using zeros and ones. But one question that has always confused masses is about how they do it. How can an inanimate silicon-being use just ones and zeros to understand and perform operations ranging from addition and multiplication to the ones as complex as playing a video game?

What are the zeroes and ones?

Everything that a computer does can be traced back to these two fundamental values, that is a 0 and a 1. A zero and a one constitute what is called the electrical signal. The preliminary idea behind these boolean values was to use voltage levels to transmit different information. Voltage levels such as 1, 2, 3, 5 and so on could have been used, but the problem with this idea was that current fluctuates all the time. So this would make the computer useless if there's no stability. This led to the establishment of 0 Volt as the binary zero or False value, which has a tolerance of up to 0.8 volts and two to five Volts or greater to be established as the binary one or True value.

How are zeros and ones processed?

A computer processor is made-up of transistors. When a computer is taking input, it is sending the electrical signals to the transistors. Transistors are semiconductors that alter the flow of electrical voltage or electrical current. They are the building blocks of integrated circuits such as computer processors. Transistors have three terminals, namely the base, the emitter and the collector. They act as valves in a water pipe. When some non zero voltage is applied to the base terminal the transistor enters the ON state and it allows current flow from the collector to the emitter.

Transistors are made by the sandwiching of p-type and n-type silicon. The n-type semiconductors have a surplus of electrons while the p-type have holes. In its OFF state, the holes in the base act like a barrier, preventing any significant current flow from the emitter to the collector. When we connect the transistor to some power, the electrons can be made to move between the emitter and the collector. That is when the transistor is in ON state. When there is no current to the base, little or no current flows between the collector in the emitter, and this will be its OFF state.

In this way, depending on the input of zero or one, a transistor produces an output and acts like a switch. So transistors are used together to make something called a logic gate.

Logic gates work using a mathematical technique called Boolean algebra. So they produce the desired true or false value based on different combinations of input of zeros and ones. Different types of logic gates include AND, OR, and NOT gates.

How is input mapped to zeros and ones?

Each of the characters in the keyboard, for example, are mapped with ASCII values. ASCII values are unique codes assigned to each of the literals that can be expressed in numbers. For instance, the character capital A on the keyboard is mapped with the ASCII value of 65. The number 65 in the decimal system can be converted to an equivalent number in bits, that is zeros and ones in its binary system. So what happens when a person presses the key A on the keyboard is, a bundle of seven wires

sends a combination of signals in 1s and 0s (high and low) that represents the binary equivalent of the character. In this case, 1000001. These electrical signals are hence transferred to the integrated circuit within the system for operation.

How many transistors are required?

A laptop processor has approximately 3 billion transistors. In addition to processing, transistors also help in memory and storage systems. A laptop RAM, and other storage devices can add tens of billions more transistors. These transistors together store a combination of 0s and 1s (switched off or switched on respectively) and help in storing information. A modern regular computer could be using 2 to 4 billion transistors.

In 2020, Graphcore, an AI chip maker from the UK, had introduced a new computer chip that packs a remarkable 60 billion transistors into a single silicon wafer. This startup then was taking on Nvidia with a new chip designed specifically for running advanced AI algorithms.

Although the computing power has grown exponentially over the years, the basic architecture of the computer chips hasn't changed much. A chip contains billions of transistors that can be switched on or off individually. With more transistors, a processor can perform increasingly more complicated instructions leading to faster processing speeds and increased memory capacity. There is a law, called Moore's law, which observes that the number of transistors in a dense Integrated Circuit doubles about every two years.

Samah Syed - I Year CSE

THE RISE OF NATURAL LANGUAGE PROCESSING: ENGLISH AS A GATEWAY TO AI INTERACTION

Introduction:

The rapid advancements in Artificial Intelligence (AI) have transformed the way we interact with technology. One of the most exciting developments is Natural Language Processing (NLP), a branch of AI that enables machines to understand and interpret human language. As NLP continues to evolve, it has brought us closer to a future where English, and other natural languages, serve as a gateway to seamless AI interaction.

From Programming to Natural Language Interfaces:

Traditionally, computer programming has relied on specific coding languages like Python, Java, or C++. While these languages are powerful tools for software development, they require a steep learning curve and a specialized skill set. This exclusivity has often limited the accessibility of AI technology to those with coding expertise.

NLP has changed this landscape dramatically. It empowers AI systems to understand and process natural language, enabling users to communicate with machines in their own words. Instead of writing complex lines of code, users can now interact with AI systems using simple English instructions, making technology more inclusive and user-friendly.

Applications of NLP in Everyday Life:

The applications of NLP are widespread and increasingly integrated into our daily lives:

1. Virtual Assistants:

The rise of virtual assistants like Siri, Alexa, and Google Assistant has revolutionized human-computer interactions. These smart assistants understand voice commands and perform various tasks, such as setting reminders, playing music, or searching the web, simply by interpreting spoken English.

2. Customer Support:

Many businesses now employ AI-powered chatbots for customer support. These chatbots can understand customer queries and provide relevant responses, reducing the need for customers to navigate through complex menus or wait for human assistance.

3. Language Translation:

NLP has vastly improved language translation tools, making it easier for people to communicate across linguistic barriers. English NLP models have paved the way for advanced translation services, enhancing global connectivity.

4. Data Analysis:

NLP techniques have facilitated the analysis of large volumes of unstructured text data, such as social media posts, customer reviews, and news articles. This allows businesses to gain valuable insights from unstructured sources.

The Promise of Human-like Conversations with AI:

One of the ultimate goals of NLP is to create AI systems capable of engaging in human-like conversations, a concept known as conversational AI. This vision aims to build AI that understands context, nuances, and emotions, enabling more natural and productive interactions between humans and machines.

While current NLP models have made significant strides in understanding language, true conversational AI remains a challenging task. Achieving human-like conversations involves comprehending humor, sarcasm, and cultural references, which requires a deeper understanding of human cognition and context.

Challenges and Ethical Considerations:

As NLP becomes more powerful, it raises some critical challenges and ethical considerations:

1. Bias in Language Models:

NLP models are trained on vast amounts of data from the internet, which can sometimes reflect societal biases. If not carefully addressed, these biases can be perpetuated and amplify existing inequalities.

2. Privacy Concerns:

As NLP systems handle sensitive information, there are concerns about data privacy and security. Striking the right balance between user convenience and data protection is essential.

3. Miscommunication:

Although NLP has made remarkable progress, misinterpretations of language still occur. These miscommunications can lead to errors and unexpected outcomes, especially in critical applications like healthcare or finance.

Conclusion:

The evolution of Natural Language Processing has brought us closer to a world where language is the gateway to AI interaction. As English, and other natural languages, become more integrated into AI systems, technology becomes more accessible, intuitive, and inclusive. While challenges and ethical considerations remain, the potential benefits of NLP are undeniable, promising a future where humans and machines communicate seamlessly, opening up new possibilities for innovation and collaboration.



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