VOLUME: 9
ISSUE: 2

SMRITI

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

SNEAK PEEK

HOD'S DESK

My hearty new year wishes to all the readers of Smriti. It has been more than 10 months since the campus became devoid of its soul, the cheerful students buzzing around. Hopefully, everyone will get vaccinated soon and the students can come back to campus again.

I congratulate Sujaudeen and Beulah on successfully defending their Ph.D thesis. I wish them the best in their future research endeavours. I appreciate Bala, Bharathi and Kavitha for organizing a workshop on the "Role of ML and DL on Cybersecurity". The resource persons from Cisco were able to provide practical insights into this topic.

My hearty congratulations to our final year student Praveen Kumar who has emerged in the top 5 percentile and has won the Gold Honour in the International Youth Math Contest (IYMC) which is one of the biggest online Math contests for students from around the world. Our final year students Mohanasundar, Kandavel, and Kanishq have won India's biggest community Hackathon - InOut 7.0 with their product (Teleport) and have won prizes worth of **200$** (3 x Amazon Alexa). In addition to that, they have also bagged a seed grant of **1,165$** (Rs. 85K) for their project. I congratulate them and wish them the best with their project.

It was very enjoyable to virtually meet and catch up with several of our alumni both in India as well as abroad during the annual alumni meet – Tribute. I would like to place my sincere appreciations to our alumna Sowmya Sundaram who has expressed her interest in offering a value-added course to our third-year students in the area of deep learning for Natural Language Processing.

It was very impressive that ACE office-bearers organized our department-specific events in the online mode during the annual SSN symposium Invente. I commend all the student office-bearers, faculty in-charges Sujaudeen and Raghuraman as well as all the faculty coordinators for the various events.

We are right now in the middle of the preparatory work for submitting the report with respect to the next cycle of NBA accreditation for our undergraduate program. It will be nice

if the alumni can share their positive experiences, accolades or awards won in their professional career. We are also revising the undergraduate curriculum. If any of the alumni have specific inputs, I urge you to reach out to me.

Amidst these tough times due to the pandemic, we all derive strength and inspiration by mutually cheering and supporting each other. Let us be united in our efforts to take our department to even greater heights.

Dr. Chitra Babu
HoD/CSE

FACULTY ACTIVITIES

1. **Dr. Chitra Babu** had organized a virtual meeting with multiple team leaders and the Management of Caterpillar on 6th November to explore and discuss potential opportunities of collaboration in the area of Machine Learning. **Dr. T. T, Mirnalinee and Dr. D. Thenmozhi** presented the projects that have been carried out in the area of image analysis and Text Analysis.
2. **Dr. A. Chamundeswari** organized DC meeting for research scholar on 2 November 2020.
3. **Dr. R. Kanchana, Dr. J. Suresh** acted as Jury members for Smart India Hackathon 2020 Hardware Edition and evaluated several projects during 18-20 Nov 2020.
4. **Dr. D. Thenmozhi** convened a confirmation DC meeting for her full time research scholar A. Kalaivani on 14 Dec, 2020.
5. **Dr. R. Kanchana** chaired the International virtual workshop on Artificial Intelligence in the IoT Security Services (AI-IOTS 2020) collocated with the conference on Service Oriented Computing (ICSOC 2020) on December 14, 2020.
6. **Dr. R. Kanchana** attended the IEEE TALE 2020: International Conference on Engineering, Technology and Education held in ILRN 3D-virtual campus mode during 8-11 Dec 2020.
7. **Dr. R. Kanchana** attended the 18th International Conference on Service Oriented Computing (ICSOC 2020) on December 15-17, 2020 in virtual platform.
8. **Dr. D.Venkatavara Prasad**, attended 4th Board of Studies Meeting of the Department of Computer Science and Business Systems on 21-12-2020.
9. **Dr. Chitra Babu**, attended the Board of Studies meeting of the Department of CSE. Government College of Engineering, Bargur through Google Meet on 28.12.2020.

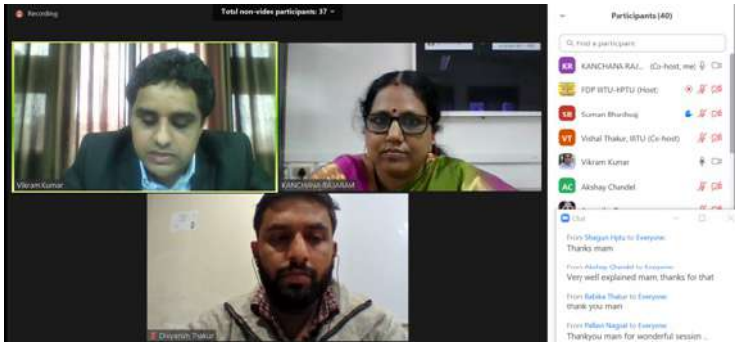
10. **Dr. Chitra Babu, along with Dr. Viraj Kumar** of Dayanand Sagar Engineering and Dr. Neeldhara Misra of IIT Gandhi Nagar presented their proposal on "Multi-institutional Investigation of Gender Disparities on Programming Competence in India" during the ACM India Annual COMPUTE Conference on 12th December 2020.
11. **Dr. T.T. Mirnalinee**, convened Synopsis meeting for the Part time scholar Mr. H. Shahul Hamead on 29/12/2020.
12. **Dr. Chitra Babu**, attended the AICTE- EDX Online Campus Essentials(Campus Digitisation) on 9th December 2020 at 2 PM. EdX is planning to give 2500 free online certification licenses. Faculty and students can use this to take courses from a list of 160 courses. The agreement has been signed by Kala Madam and the EdX.
13. **Dr. Chitra Babu, Dr. R. S. Milton, Dr. T. T. Mirnalinee and Dr. R. Kanchana,** attended the meeting related to EFP with Prof.Ganesh Samudra on 1st Dec 2020.

WEBINARS ATTENDED/ ORGANIZED

1. **Dr. R. Kanchana and Dr. V. Balasubramanian** attended an ACM India Education Webinar "Building a Successful and Satisfactory Academic Career" by Pankaj Jalote, Distinguished Professor at IIIT Delhi held on 7 November 2020.
2. **Dr. K. R. Sarath Chandran** attended a webinar on "Partial Reconfiguration Flow on Zynq using Vivado" organized by Coreel Technologies, Bangalore on November 6, 2020.
3. **Dr. Chitra Babu** hosted the ACM India Education Webinar titled "Building a Successful and Satisfactory Academic Career" by Pankaj Jalote, Distinguished Professor at IIIT Delhi on 7th November 11 AM.
4. **Dr. Chitra Babu** hosted the ACM India Education Webinar titled "How to better prepare CS/IT grduates for industry?" by Dr. Navin Kabra, CTO and Co-founder of Reliscore, a startup company on January 12, 2021.
5. **Mr. B. Senthil Kumar,** virtually attended a talk on "Social Media Misinformation in India" by Joyojeet Pal, Principal Researcher, Microsoft Research at Indian Symposium on Machine Learning (IndoML), Organized by IIT - Gandhinagar on 17, December 2020.
6. **Dr. D.Venkatavara Prasad,** attended a Webinar titled "Entrepreneurship and innovation as career opportunity conducted by Panimalar Engineering College on 15-12-2020.
7. **Ms. M. Saritha,** has attended ACM India Webinar Series on Education: "How to Better Prepare CS/IT Graduates for Industry?" organized by ACM on January 12, 2021.

INVITED LECTURES

1. **Dr. Chitra Babu** was invited as an eminent speaker to address the first year CSE, IT and MCA students of Acropolis Institute of Technology and Research, Indore, Madhya Pradhesh during their induction program on 21st November 11 AM.
   Youtube link: https://lnkd.in/eMZMB4j
2. **Dr. R. Kanchana** was a resource person for the FDP on Big Data Computing organized by the Himachal Pradesh Technical University along with IIIT Una, Himachal Pradesh. She delivered lectures in 2 sessions on "Introduction to Big Data" and "Big Data enabling technologies" on 23rd Nov 2020.



3. **Dr.P.Mirunalini** Handled a session on "Image Classification using Deep Learning" for the data science students admitted for Jan 2020 batch on 7 November 2020.
4. **Dr. R. Kanchana** delivered a talk on" Introduction to Big Data and Big data technologies" during the 5-day STTP on Big Data, Machine Learning and Deep Learning: The Paradigm Shift organized by the Department of CSE, SRM Institute of Science and Technology, Vadapalani Campus in Technical Collaboration with NVIDIA on 14th Dec 2020.
5. **Ms. A. Beulah,** delivered a talk on "Medical Image Processing using ML", in the STTP on "AI in Healthcare", organized by Dept. of IT, SSNCE, Chennai, held during 14-19 December 2020.
6. **Dr. T.T. Mirnalinee,** delivered talks on "Neural Networks and Multi-layered Neural Networks, Implementation using Python" and "Deep Learning Frameworks and Packages DNNs (Deep Neural Networks) Implementing deep learning models using python" during the AICTE sponsored online STTP on Data Science, organized by Acropolis Institute of Technology and Research Indore on 11, 17 December 2020.
7. **Dr. J. Bhuvana,** acted as a resource person for the ATAL FDP programme titled "CYBER SECURITY" organised by TKM College of Engineering, Kollam, Kerala, India on Monday 28th of December 2020.
8. **Dr. J. Bhuvana,** acted as a resource Person for AICTE sponsored online STTP on Data

Science (Phase-IV) on Data handling with Keras: Keras API organized by Acropolis Institute of Technology & Research, Indore on 15, December 2020.

9. **Dr. K.Vallidevi,** acted as a resource person in AICTE-ATAL FDP organized by Velalar College of Engineering and Technology on 11/12/2020 in which she delivered a talk on Augmented Reality and Virtual Reality Applications.
10. **Dr. S. Saraswathi,** acted as a resource person for the ATAL FDP programme titled "CYBER SECURITY" organised by TKM College of Engineering, Kollam, Kerala, on 31-12-2020.
11. **Dr.P.Mirunalini**, delivered a talk on "Medical Image Processing using Deep Learning", in the STTP on "AI in Healthcare", organized by Dept. of IT, SSNCE, Chennai, held during 14-19 December 2020.
12. **Dr.R.S Milton,** delivered a talk on Data Science (Phase-IV) in the AICTE Sponsored Online STTP organized by Acropolis Institute of Technology and Research, Indore.

TECHNICAL PROGRAM COMMITTEE MEMBERS

1. **Mr. B. Senthil Kumar** is one of the Programme Committee members in the First Workshop on Language Technology for Equality, Diversity, Inclusion (LT-EDI-2021) which will be co-located with European Chapter of the Association for Computational Linguistics (EACL). EACL 2021 will be held from 19 to 23 of April, 2021.
2. **Dr. R. Kanchana** was invited to be session chair for the session on "Technology-Enhanced Learning" during the IEEE TALE 2020: International Conference on Engineering, Technology and Education on 9th Dec 2020.
3. **Dr. B. Bharathi,** served as a Program Committee Member in the First Workshop on Speech and Language Technologies for Dravidian Languages (DravidianLangTech-2021) co-located with EACL2021.
4. **Dr. Chitra Babu,** was a Session-Chair for the "Best Practices in Online Teaching/Learning" session that was part of the ACM India Annual COMPUTE Conference on 11th December 2020.
5. **Dr. R. Kanchana** chaired the International virtual workshop on Artificial Intelligence in the IoT Security Services (AI-IOTS 2020) collocated with the conference on Service Oriented Computing (ICSOC 2020) on December 14, 2020.

WORKSHOPS/FDPs ATTENDED

1. **Dr.S.V.Jansi Rani** completed a ATAL FDP On "System Engineering –Machine Intelligence for Information Retrieval" conducted by National Institute of Technology, Kurukshetra, during November 4 - 8, 2020.
2. **Dr. Chitra Babu, Dr. J. Bhuvana** attended "Inaugural Raj Reddy Artificial Intelligence Lecture" given by the 2019 Turing award winners, Prof. Yann Lecun, Prof. Jeff Hinton and Dr. Yoshua Bengio that was organized by Carnegie Mellon University, USA on 18th November.
3. **Mr. B. Senthil Kumar**, attended The 12th meeting of Forum for Information Retrieval Evaluation 2020 (FIRE 2020), virtual event hosted by IDRBT, Hyderbad, 18-20 Dec, 2020.
4. **Dr. T.T. Mirnalinee** attended a 5 days AICTE Training And Learning (ATAL) Academy Online FDP on the topic Internet of Things (IoT)" from 2020-12-7 to 2020-12-11 at SRM INSTITUTE OF SCIENCE AND TECHNOLOGY, Delhi NCR Campus, Ghaziabad.
5. **Dr. Chitra Babu**, attended ATAL Academy online FDP on Data Sciences organized by Madras Institute of Technology(MIT) during 14th-18th December 2020.

PAPER REVIEWS

1. **Dr. V. Balasubramanian** reviewed a paper for Computers and Security Elsevier Journal.
2. **Dr. R. Kanchana** reviewed a book chapter for a book to be published in EAI / Springer Innovations in Communications and Computing Series, 2021 on 23rd Dec 2020.
3. **Dr.D. Thenmozhi**, reviewed two chapters for a book which will be published by CRC Press Taylor and Francis Group.
4. **Ms. A. Beulah** reviewed papers for the journals "Circuits, Systems, and Signal Processing", "International Journal of Electrical and Computer Engineering (IJECE)" and for the conference ICCIDS-2021.

EXTERNAL FUNDED PROJECTS SUBMITTED

PI / Co - PI	Title of the Project	Funding Agency / Budget-Lakhs	Duration
PI: Dr. R. Kanchana CO-PI: Dr. N.G. Bhuvaneswari Amma, IIIT Una, HP	SpoofDet-CLF: A Deep Learning Model for Spoof Detection in Contactless Fingerprints	DST SERB POWER Grant / 29.6	3 Years
Dr. J. Suresh	Designing a lightweight consensus mechanism in blockchain for IoT based asset management	AQIS (AICTE –RPS 2020-21) / 14.72.968	3 Years
Dr. D. Thenmozhi	A contactless tool to detect psychotic disorders bipolar affective disorder, psychosis and schizophrenia from multi modal social mediadata using hybriddeep neural networks	DST SERB POWER Grant / 24.05	3 Years
Dr. T. T. Mirnalinee Dr. J. Bhuvana	Crop health monitoring system for smart agriculture based on edge computing	DST SERB POWER Grant / 29.99	3 Years
Dr. Chitra Babu, Dr. Viraj Kumar, Dayanand Sagar College of Engineering, Dr. Neeldhara Misra, IIT Gandhinagar	Multi-Institutional Investigation of Gender Disparieies on Programming Competence in India	ACM India Council / 10.00	2 Years
Ms. Karthika V(Research Scholar) Dr. J. Suresh	Design and implementation of e-Governance in land registration using blockchain technology	DOTE campus (RFRS 2020-2021) /3.00	3 Years
Dr. P.Mirunalini and Dr. C.Aravindan	Automatic screening and categorization tool for COVID-19 pandemic disease	DST- SERB POWER under woman empowerment scheme / 26.83	3 Years

FACULTY PUBLICATIONS / PAPER PRESENTATIONS

1. **Marimuthu S, Bhuvana J and Mirnalinee T T,** published a paper titled, "Disease Detection in Tomato Plants using Deep Learning, Intelligent Systems and Computer Technology, Advances in Parallel Computing, IOS Press, Vol.37, pp. 190-195, 2020.
2. **Mirnalinee, T. T., Bhuvana, J., Nallathambi, D. J., & Muthukumar, A.** published a book chapter titled,"Deep Learning-Based Malware Detection and Classification". In Confluence of AI, Machine, and Deep Learning in Cyber Forensics (pp. 93-116). IGI Global. ISBN: 9781799849001.
3. **Dr. A. Chamundeswari, Dr J Suresh and Dr S Saraswathi** edited a book titled, "Confluence of AI, Machine, and Deep Learning in Cyber Forensics", published by IGI Global publisher, ISBN 9781799849001.
4. **Dr. P. Mirunalini** presented a paper titled "Fish Species Recognition using Transfer Learning Techniques", in the International Conference 2020 3rd International Symposium on Advanced Intelligent Informatics (SAIN – 2020) @ Nanjing – China and Yogyakarta – Indonesia which was conducted virtually held during 25-26 Nov 2020.
5. **D Thenmozhi, Nandhinee Pr, S Arunima and Amlan Sengupta** published a paper titled "Ssn_nlp at SemEval 2020 Task 12: Offense Target Identification in Social Media Using Traditional and Deep Machine Learning Approaches" in Proceedings of the Fourteenth Workshop on Semantic Evaluation, SEMEVAL, pp. 2155-2160, Dec 8-13, 2020, ACL-Anthology.
6. **K Rishivardhan, S Kayalvizhi,D Thenmozhi, R Raghav and K Sharma** published a paper titled "SSN-NLP at SemEval-2020 Task 4: Text Classification and Generation on Common Sense Context Using Neural Networks" in Proceedings of the Fourteenth Workshop on Semantic Evaluation, SEMEVAL, pp. 580-584, Dec 8-13, 2020, ACL-Anthology.
7. **Kalaivani A, Thenmozhi D** published a paper titled "SSN_NLP_MLRG at SemEval-2020 Task 12: Offensive Language Identification in English, Danish, Greek Using BERT and Machine Learning Approach" Proceedings of the Fourteenth Workshop on Semantic Evaluation, SEMEVAL, pp. 2161–2170, Dec 8-13, 2020, ACL-Anthology.
8. **Kayalvizhi S, Thenmozhi D and Chandrabose Aravindan** published a paper titled "SSN_NLP at SemEval-2020 Task 7: Detecting Funniness Level Using Traditional Learning with Sentence Embeddings" in Proceedings of the Fourteenth Workshop on Semantic Evaluation, SEMEVAL, pp. 865–870, Dec 8-13, 2020, ACL-Anthology.
9. **Kayalvizhi S, Thenmozhi D and Chandrabose Aravindan** published a paper titled "SSN NLP@ SardiStance: Stance Detection from Italian Tweets using RNN and Transformers",

Proceedings of the 7th Evaluation Campaign of Natural Language Processing, CEUR, Vol. 2765, pp.150(1-4), Dec 2020.

10. **B Senthil Kumar, D Thenmozhi and S Kayalvizhi** published a chapter titled "Tamil Paraphrase Detection Using Encoder-Decoder Neural Networks" in IFIP Advances in Information and Communication Technology book series, volume 578, pp 30-42, Springer.
11. **K. Lekshmi, Lekshmi Ruba Soundar Kathavarayan, K.Madheswari, and Nagendram Dinakaran,** published a paper titled "Nuclei detection in hepatocellular carcinoma and dysplastic liver nodules in histopathology images using bootstrap regression" in Histol Histopathol. 35(10), 2020, DOI: 10.14670/HH-18-240.
12. **Ms.S. Rajalakshmi, Dr.R. S Milton, and T. T. Mirnalinee**, published a paper titled "Content boosted hybrid filtering for solving pessimistic user problem in recommendation systems", in Intelligent Data Analysis. vol. 24(6) pp-1477-1496, DOI: 10.3233/IDA-205244.
13. **Dr. J. Suresh, and Karthika Veeramani,** published a book chapter titled, " Confluence of AI, Machine, and Deep Learning in Cyber Forensics / Use-Case of Blockchain in Cybercrime and Cyberattack" IGI Global, pp:145-163, 10.4018/978-1-7998-4900-1.ch009.
14. **Dr. S. V. Jansi Rani** presented paper titled "Technology development to provide safety and security for women" in AICTE Sponsored International E-Conference on Data Analytics, Intelligent Systems, and Information Security (ICDIIS' 20) conducted by Dr.Mahalingam College of Engineering & Technology during Dec 11-12, 2020.
15. **Dr.S.V.Jansi Rani** presented paper titled "Technology development to provide safety and security for women" in AICTE Sponsored International E-Conference on Data Analytics, Intelligent Systems, and Information Security (ICDIIS' 20) conducted by Dr.Mahalingam College of Engineering & Technology during Dec 11-12, 2020.
16. **Ms. S. Rajalakshmi, Angel Suseelan, and S. Milton Rajendram.** "TECHSSN at SemEval-2020 Task 12: Offensive Language Detection Using BERT Embeddings." In Proceedings of the Fourteenth Workshop on Semantic Evaluation (SemEval2020), collocated with The 28th International Conference on Computational Linguistics (COLING-2020).pp. 2190-2196. Barcelona, Spain (Online), December 12, 2020.
17. **Ms. S. Rajalakshmi, Mohanasundar, M., Kevin J. Thelly, Pranav Raveendran, S. Rajalakshmi, and S. Angel Deborah.** "Student Attendance Manager Using Beacons and Deep Learning." In Journal of Physics: Conference Series, vol. 1706, no. 1, p. 012153. IOP Publishing, 2020. (Scopus Indexed) First International Conference on Advances in

Physical Sciences and Materials 13-14 August 2020, Coimbatore, India.

18. **Dr. D Thenmozhi** participated in the shared tasks in FIRE 2020 and presented the following papers.
    a. SSN_NLP_MLRG@Dravidian-CodeMix-FIRE2020: Sentiment Code-Mixed Text Classification in Tamil and Malayalam using ULMFiT
    b. Best Matching Algorithm to Identify and Rank the Relevant Statutes
    c. ssn_nlp@FIRE2020 : Automatic extraction of causal relations using deep learning and machine translation approaches
    d. Multilingual Hate Speech and Offensive Content Detection in Indo-European Languages using ALBERT.
19. **Dr. J. Bhuvana,** participated in a task and published a paper titled " SSNCSE-NLP @ EVALITA2020: Textual and Contextual Stance Detection from Tweets Using Machine Learning Approach" In EVALITA 2020 Seventh Evaluation Campaign of Natural Language Processing and Speech Tools for Italian (pp. 1-6). CEUR
20. **S. Kavitha, S. Poornima , N. Sheerin Sitara and A. Sarada Devi,** " Classification of Lung Tuberculosis using Non Parametric and Deep Neural Network Techniques", 2020 4th International Conference on Computer, Communication and Signal Processing (ICCCSP) , SSN College of Engineering, 28-29 Sep 2020.

FACULTY PARTICIPATION IS COMPETITIONS

1. The team SSN_NLP with team members **Dr.D. Thenmozhi, Arunima S, Amlen Sengupta and Avantika Balaji** participated in CEREX@FIRE2020 shared task and secured first place in Task2 (Tagging) and secured first place in Task1 (Binary classification).
2. The team SSN_NLP_MLRG with the team members **Dr. D. Thenmozhi and A. Kalaivani** participated in HASOC@FIRE 2020 shared task and secured second place in German-Subtask 2.

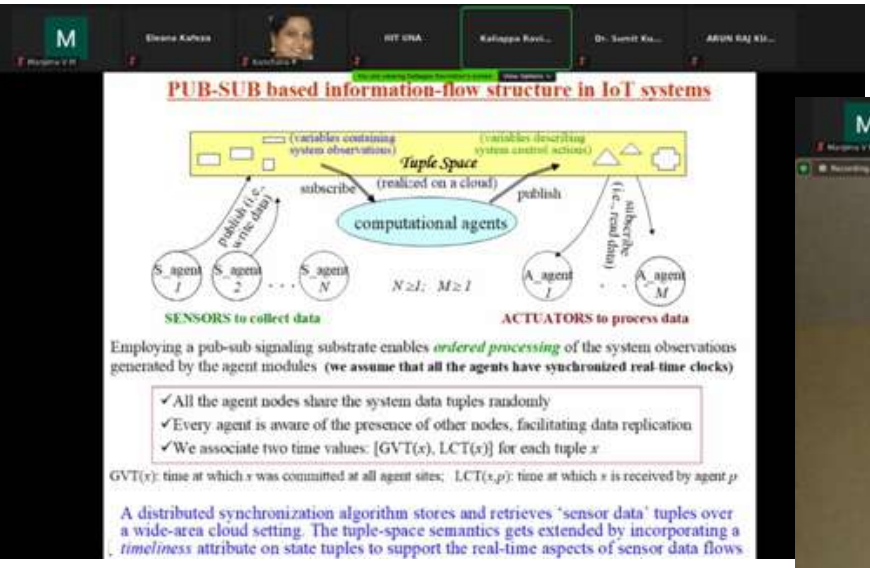
INTERNATIONAL VIRTUAL WORKSHOP ON ARTIFICIAL INTELLIGENCE IN THE IOT SECURITY SERVICES (AI-IOTS 2020)

Dr. R. Kanchana along with Prof. S. Selvakumar, The Director, IIIT Una (HP) chaired the International virtual workshop on Artificial Intelligence in the IoT Security Services (AI-IOTS 2020). It is collocated with the 18th Edition of the International Conference on Service Oriented Computing (ICSOC 2020) on December 14, 2020.

The workshop had a good response from the researchers of IOT community and 4 papers were accepted after 2 to 3 rounds of reviews and revisions. The authors of the accepted papers are from Bulgaria, India, West Africa and Portland. The papers were well presented and demo / results were included by every author that received a good feedback. The session chairs were Dr. P. Arun Raj Kumar, NIT Calicut, India, Dr. A. R. Vasudevan, NIT Calicut, India, and Dr. N.G. Bhuvaneswari Amma, IIIT Una, HP, India

The keynote talk on " Data replication and caching issues in large IoT infrastructures" was delivered by Prof. K. Ravindran, Dept. of Computer Science, City University of New York, USA

The accepted papers will be included in the conference proceedings published by Springer Verlag in the Lecture Notes in Computer Science (LNCS) series.

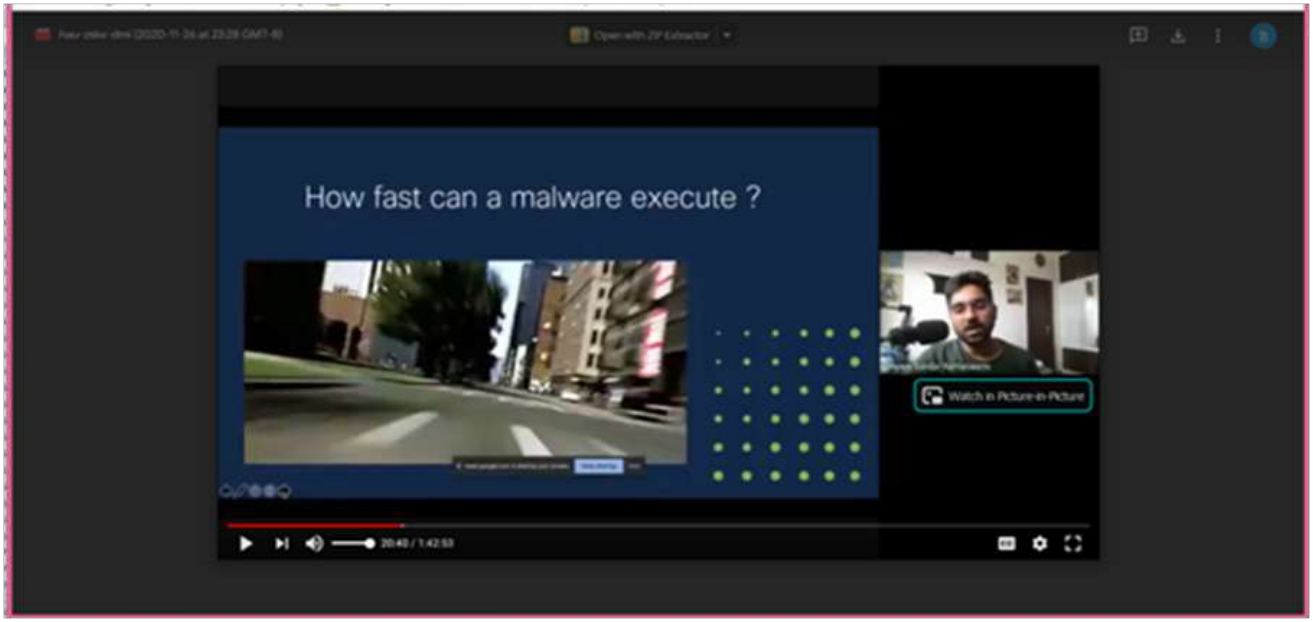


Keynote talk by Prof. K. Ravindran

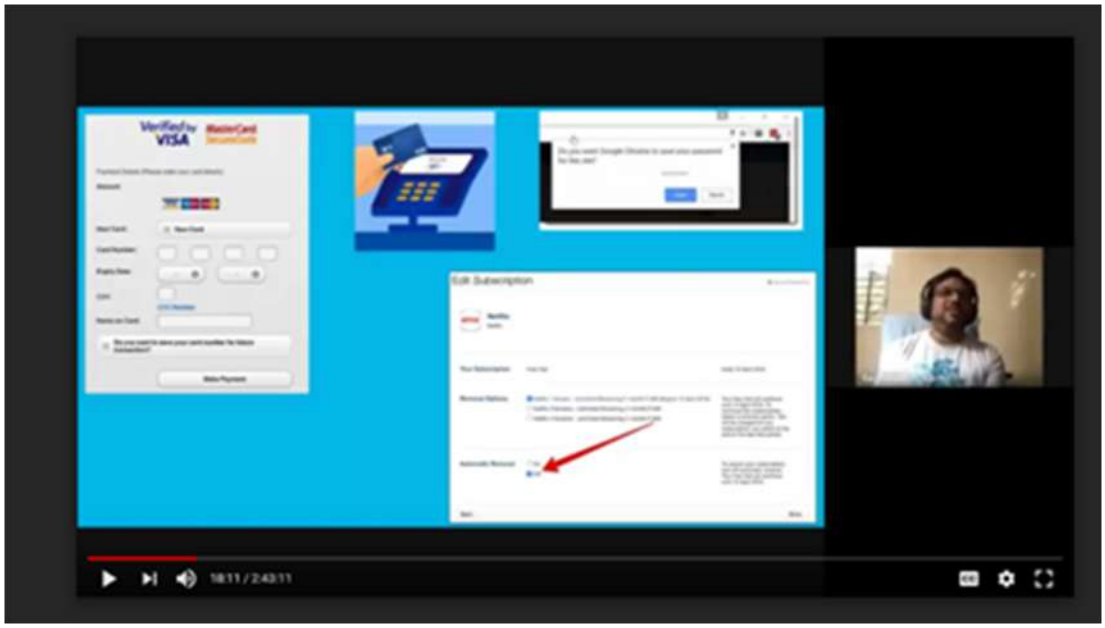
Presentation by TsvetanTsokov, Institute of Mathematics and Informatics, Bulgarian Academy of Sciences, Bulgaria, Europe

ROLE OF MACHINE LEARNING AND DEEP LEARNING IN CYBER SECURITY

The National Level Virtual Workshop on "Role of Machine Learning and Deep Learning in Cyber Security" was organized by Dr. B. Bharathi, Dr. S. Kavitha and Dr. V. Balasubramanian during 27-28 November 2020. The workshop targeted the UG, PG students, research scholars and faculty members working in the area of cyber security. The resource persons for the workshop were Mr. Kaarthik Sivakumar, Principal Engineer, CISCO, Mr. Shyam Sundar Ramaswami, Lead security threats researcher, CISCO, Mr. Prapanch Ramamoorthy, Mr. Raghu Kulkarni and Mr. Sreenidhi Ramadurgam, Security research analysts, CISCO. There were 38 participants from different institutions.



On the first day morning session, Mr. Kaarthik Sivakumar, introduced the need of machine learning for cyber security. Mr. Shyam Sundar Ramaswami handled "Hidden plain sight: Machine learning for forensics" in the afternoon session. He elaborated about the possible machine learning techniques by which malware can be detected.



On the second day morning session, Mr. Prapanch Ramamoorthy and Mr. Raghu Kulkarni handled a session on "Fight against cyber crime". He explained the concepts with various real time case studies. In the afternoon session, Mr. Sreenidhi Ramadurgam, elaborated the "Tools related to malware, anomaly and intrusion detection". He demonstrated the different types of phishing activities using various tools.

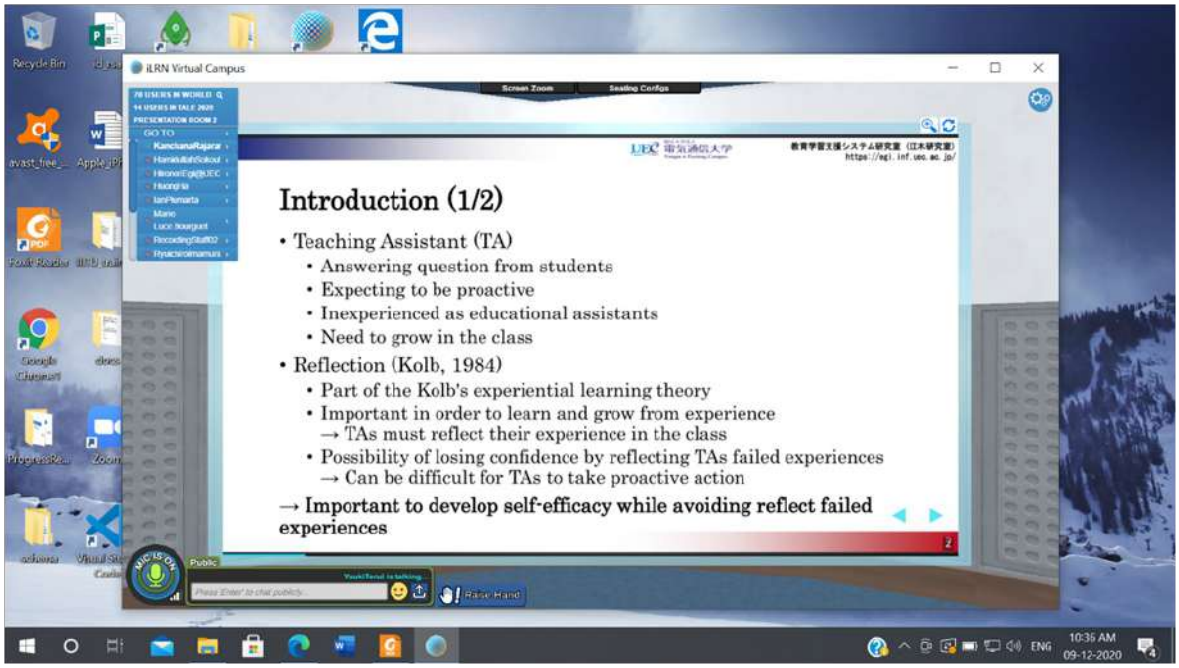
The workshop received excellent feedback from the participants especially about the informative content delivered by the speakers.

Dr. B. Bharathi, Dr. S. Kavitha and Dr. V. Balasubramanian
Asso. Prof / CSE

IEEE TALE 2020

TALE is the IEEE Education Society's premier conference series in the Asia-Pacific region. It aims to provide a forum for scholars and practitioners to share their knowledge and experience in engineering and technology education, as well as in technology-enabled educational innovation across a variety of academic and professional disciplines.The IEEE International Conference on Teaching, Assessment, and Learning for Engineering (TALE) is held each year in the Asia-Pacific region (IEEE Region 10). The theme for this year was "Embarking on a new era of learning with transformative technologies"

Dr. R; Kanchana was invited to be session chair for the session on Technology-Enhanced Learning" on 9th Dec 2020. The conference was conducted on iLRN 3D virtual campus. 4 papers were presented and feedback/suggestions were provided to the presenter. It was a wonderful session.



EXTERNAL INTERACTION

Dr. D. Thenmozhi, ASP/CSE attended a meeting with Tata Elxsi on December 24th 2020 to discuss on the project "Generate Knowledge graph in local languages using public domain data using NLP related to advanced techniques in agriculture"

A BRIEF REPORT ON THE SEMINAR ON SYSTEM DESIGN

Aiming to introduce students at the undergraduate level to System Design and help them get started on their journey of interview preparation, a seminar was conducted by three accomplished final year Computer Science students on the 8th of December 2020. A total of 40 participants attended this very fruitful virtual seminar. Kanishq, one of the three resource persons, started off the presentation with a simple and easy to understand introduction to System Design and why it is important to think about system scalability in the real world. He went on to explain why system design is important by saying that good developers and engineers are those who critically analyze the problem beforehand to save time and resources. He also talked about a few different terminologies like scalability, reliability, availability, and efficiency and highlighted the importance of these terms through real life examples. He also talked about a few more basic components like the different types of architecture, polling, web sockets, and proxies before handing over the presentation to the second speaker of the seminar, Kanandavel, who continued with the next component - Load Balancer.

He gave a brief introduction about it and pinpointed the benefits of using one. He also gave an idea on how to implement them using Load balancer algorithms. He then went on to explain the use cases of cache and touched on important topics related to it like cache validation and cache eviction policies before diving into Databases. He then gave a well-rounded explanation about the different types of databases- SQL and NoSQL and gave the audience tips on how to choose the best database for their projects. Lastly, he talked about the concept of indexing and its use.

He then handed over to Kanishq who talked about the CAP theorem which expands for Consistency, Availability, Partition Tolerance, and also gave a real-world example for better understanding.

The third speaker for the evening, Mohansundar, presented the most awaited section of the seminar in which he walked the audience through an interviewer's favorite design problem - Design a URL shortening service like Tiny URL. He explained how to draft the functional and non-functional requirements, analyze the traffic, estimate the storage and cost, and brought in all the basic components that were discussed by the other speakers to come up with a design solution.

The session concluded with Kanandavel giving the audience tips on how to tackle new design problems and he also highly encouraged them to ask the interviewers questions regarding the requirements. Overall, it was a very rewarding seminar, and the audience left with a clear cut idea on how to prepare for the System Design interview round.

Sowmya R (3rd year)
Subhiksha S (3rd year)

INTEL FPGA TECHNOLOGY DAY (IFTD 2020)

Intel FPGA Technology Day (IFTD) was a virtual event (took place on November 18, 2020) that showcased the latest Intel FPGA products and solutions through a series of webinars and demonstrations from Intel, partners, and customers. During this day-long event, various discussions were arranged on how Intel FPGAs, Intel eASIC structured ASICs, Intel SmartNICs, and Intel Enpirion power solutions. The event was aimed to help developers to overcome many design challenges, and accelerate the business innovation. In the IFTD 2020 virtual exhibition space, they demonstrated Intel FPGA technology in action in the edge, in data centers, and in the cloud.

The talks were mainly in Intel FPGA, Cloud computing, 5G network and Embedded/IoT tracks. David J. Moore, corporate vice president, Data Platform Group, general manager, Programmable Solutions Group talked about the scope of accelerating the future applications using Intel FPGA products. Manish Muthal, vice president, Data Platform Group, general manager, Cloud and Enterprise Acceleration Division discussed about accelerating cloud applications with various Intel's data center solutions. This event was helpful in exploring the various Intel's new FPGA products that can be used to accelerate the future data intensive applications.

Dr. Sarath Chandran K. R.
AP/ CSE

SSN INSTITUTION'S INNOVATION COUNCIL (IIC) CELL INAUGURATION AND FIRST COUNCIL MEETING

The Ministry of Education (MoE) through MoE's Innovation Cell (MIC) launched the Institution'sInnovation Council (IIC) program in collaboration with AICTE for Higher Educational Institutions(HEIs). In this regard, IIC 3.0 is established in our institution and the first online meeting was held on 16-12-20. This activity is anchored by Dr.Seyezhai and Dr.S.Sureshkumar. And I was the Internship Activity Co-ordinator in the IIC.

The meeting highlighted the initiate of Ministry of Education and AICTE to systematically foster the culture of innovation and start-up ecosystem in Higher Educational Institutions (HEIs). Also because of Covid, the last date to submit report for Q1 and Q2 is 31st Jan 2021. Hence activities are planned in the month of December and January.

The major objective of Institution's Innovation Council (IIC) is to establish Building and Streamlining Innovation and Start-up Ecosystem in Higher Educational Institutions. IIC Encourage, Inspire and Nurture Young Students by Exposing them to New Ideas and Process of Resulting in Innovative Activities & Entrepreneurial in their Formative Years.Major focus is to create a vibrant local innovation ecosystem, start-up supporting mechanism in HEIs, prepare institute for Atal Ranking of institutions on innovation achievements framework, establish function ecosystem for scouting ideas and pre-incubation of ideas, develop better cognitive ability for technology students.

The functions of IIC are to conduct various innovation and entrepreneurship-related activities prescribed by Central MIC in time bound fashion, identify and reward innovations and share success stories, organize periodic workshops/ seminars/ interactions with entrepreneurs, investors, professionals and create a mentor pool for student innovators, network with peers and national entrepreneurship development organizations, create an Institution's Innovation portal to highlight innovative projects carried out by institution's faculty and students.

Dr. Balasubramanian V.
Asso. Prof/ CSE

FDP ON "INTERNET OF THINGS"

Faculty Development Program on"Internet of Things" was organized by the Department of Electronics and Communication Engineering, SRM Institute of Science and Technology (SRMIST), Delhi NCR Campus, Ghaziabad, India from December 7-11, 2020.

On Day 1 we had sessions on AI enabled IoTs, IoT Based Data Analysis, and Artificial Intelligence of Things by experts from Indian Institute of Technology and NIT Kurukshetra , India. We learnt about IoT framework, IoT and machine learning, ML enabled IoT applications namely Customer profiling, Smart Farming, Artificial Intelligence of Things (AioT). Day 2 was all about Computer Vision and IoT, IoT & Fog Computing, Developing Intelligent Systems Based on Internet of Things by experts from Delhi Technological University, Delhi, and GIET, Odisha. Challenges in computer vision, few applications of IoT like remote robot surgery, traffic light using IoT, Intelligent systems for smart city, for electrical energy and air pollution minimization were discussed.

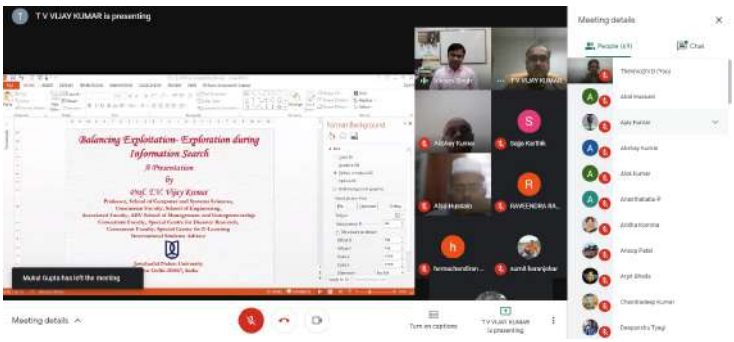
On Day 3 topics on AdHoc Networks and its Applications in IoT, IoT – Sensors, Actuation, Processing and Application of IoT in Agriculture were scheduled and given by experts from Guru Gobind Singh Indraprastha University, Delhi, and Delhi Technological. Several smart city applications like smart grid, smart air pollution management, smart disaster management, connected cars were discussed along with a detailed discussion on application of IoT in agriculture. The last session was really interesting.

Day 4 has Spintronics – Perspective and Challenges for IoT Applications Spintronics based IoT Sensors and Bussiness Analytics and Industry Use Cases in IoT by Professors from IIT Roorkee. Though the, topics on this day were very difficult to follow and understand and i am happy to share that no questions were asked on the last day test from these topics. The escape was very narrow.

Last day we had IoT in Surveillance and Machine learning , Stress Management and Art of Living and test session. It was happy to reach the last day of FDP, the organizers wisely have planned the yoga session before the test session. But it was not stress relieving since that session was mostly in hindi. Any how the last session was good we passed, though many questions were out of syllabus.

Dr. J. Bhuvana, Asso. Prof/CSE

AICTE –ATAL FDP ON "MACHINE LEARNING FOR INFORMATION RETRIEVAL"



The AICTE ATAL online FDP was organized by National Institute of Technology, Kurukshetra during November 4-8, 2020. The focus of the FDP was on "Machine learning for Information Retrieval". It was well organized with talks from eminent speakers from academic institutions namely JNU, NIT-Silchar, NIT-Kurukshetra, IIIT-Delhi, IIT-Tirupati, IIIT-Alahabad and IIT-Ropar. Speakers from industries namely TCS, Microsoft Research and American Express gave talks on recent trends in IR like conversational IR, Multimodal IR etc. The FDP was ended with a talk on art of living by Mr. Santhosh kumar.

Dr. Thenmozhi D, Asso. Prof / CSE

ONE WEEK FDP ON "CLOUD TECHNOLOGY"

The ATAL FDP was organized by INFLIBNET Centre, An Inter University Centre (IUC) of UGC during November 09 – 13, 2020 and the coordinator was Mr. Raja, Scientist C. On day 1, Mr. Yatrik PatelScientist E, INFLIBNET Centre introduced Cloud Computing Architecture and also explained various Government initiates running on Cloud. The second session was handled by Dr. Abhishek, Scientist EINFLIBNET Centre elaborated the working with various cloud service vendors and told the guidelines given by Ministry of Electronics and Information Technology(MeitY). On Day 2, Mr. Raja, Scientist C discussed security risks involved in Cloud and explained the setting of Single Sign on (SSO) Using shibboleth on Cloud. On Day 3 and 4, People from Microsoft Azure Ms. Deepthi Anantharam, Ajay Kumar Barun, Rishabh Gaur and Rishi Sharma discussed IaaS, SaaS, PaaS, also discussed how AI is infused in all Microsoft Apps. Microsoft Azure cloud storage, big data and security were discussed. On Day 5, Mr. Raja, Scientist C explained ways to register as an education institute with AWS and Azure educate initiative. Setting up of virtual Classroom over cloud was demonstrated by Thiruvikram RaoCEO, Platifi. Overall the FDP went very well, and all the sessions were well organized with industry participation.

Dr. Balasubramanian V.

Asso. Prof/ CSE

ONLINE FDP ON " DATA SCIENCES"

AICTE Training And Learning (ATAL) Academy Online FDP on " Data Sciences" conducted by Institute of Road and Transport Technology, Erode, during 02.11.2020 to 06.11.2020. The ATAL FDP was well organised with the speakers from NITs, IITs, and other reputed Institutions.

On the first day the Inaugural session was delivered by Dr. Pooja Jain from IIIT, Nagpur on the topic Introduction to Data Science and Data Pre-processing in the FN and Python for Data Science (Hands-on Session -Normal Python, NumPy, Pandas) in the AN.

Second day started with first session by Dr. Tapan Kumar Jain from IIIT, Nagpur on "Mathematical Foundations for Data Science". Dr. J. Arul Valan from NIT, Nagaland handled the second and third session on "Machine Learning & Metrics for Data Analytics" and "Predictive Analytics" respectively.

Third day sessions were delivered by Dr. M. Venkatesan from NIT, Surathkalon the topic Data Mining, Supervised and Unsupervised Learning in the first session and Data Science using Rapid Miner and Pythonin the second session, The AN session was on Data Visualization Using Tableau and Excel by Ms. Pavithra Murugesan, Senior Scientist, NextrAI, Vishakapatnam.

Dr. M. Anand Kumar from NIT, Surathkal handled the fourth day session on Natural Language Processing and Text Analysis in the first session and Word Embeddings –NLP and Deep Learning (Demo) in the second session. Prof. Jeevanandham from Kongu Engineering College, Perundurai delivered the AN session on IoT Data Visualization in Cloud Computing.

Fifth day sessions were handled by Dr. M. Venkatesan from NIT, Surathkal on Data Science for Social Media Analytics: Challenges and Opportunities and Dr. J. Arul Valan from NIT, Nagaland handled the session on Applications of Data Science in Various Fields and Case Studies.

As a part of this ATAL FDP, there was a yoga session on Sahajyoga and a session on Stress Management by Dr. Alima Zehra, CTTE College, Chennai, which was well received by the participants.

The sessions went on well as planned and the speakers took utmost care in delivering the topics and making the participants understand the concepts. All the sessions were recorded and it is available in the YouTube channel under "irttofficial" link.

The topics were handled from basics to the application level with so many real time interesting examples. The ATAL FDP was informative and useful.

Dr. G. Raghuraman, Associate Professor, CSE

FDP ON "DATA SCIENCE AND ANALYTICS"

Five days FDP on "Data Science and Analytics" organized by Indian Institute of Information Technology, Nagpur from 30-November-2020 to 4-December-2020. The day 1 (30-Nov-2020) session included Introduction to Data Science & Application in Various Domains and Mathematics for Data Science – Part – I. This session introduced application of Data Science in different fields and introduced usage of matrix operations and Eigen values for extracting useful information from big data.

On Second Day (1-Dec-2020) the session on Mathematics for Data Science – Part – II introduced about using Singular value Decomposition and Probabilities on data. The next session was about Data Analytics Techniques Using Python, in which simple python programs using Tuples, List and Dictionaries was explained. Session on Data Visualization Using Python / Stress Management introduced Data Visualization tools such as MatPlot, Tableau was explained and followed by this, a stress management activity was done.

On Day 3 (2-Dec-2020) in Dimensionality Reduction session, Singular Value Decomposition, Principal Component Analysis and Feature selection techniques were dealt with Python Programming. Following this a session on " Introduction to Machine Learning " was conducted in which basic supervised, unsupervised machine learning techniques were explained with examples.

On Day 4 (3-Dec-2020) Classification and Regression algorithms were explained with Python code. Practice of Yoga and behaviour in the work culture was handled in the Stress management session in the end of the day.

On Day 5 (4-Dec-2020) Decision Trees with pruning techniques was dealt. Finally Deep Neural Network with Sequence model and its applications was discussed. The participants are asked to take up 60 marks multiple choice questions on the final day covering the portions which as handled till day 4.

All the sessions gave an new piece of information to me which added a value to my knowledge on Data Science.

Dr. Y. V. Lokeswari
Asso. Prof / CSE

ONE-WEEK FDP ON "ARTIFICIAL INTELLIGENCE"

Dr. T. T. Mirnalinee, Dr. J.Bhuvana, Dr. B. Bharathi, Dr. R. Priyadharsini and Ms. S. Manisha attended the online one-week FDP on "Artificial Intelligence" with a focus on "building a foundation through data exploration, preprocessing and representation", from 21-25 Nov 2020 at IIIT Naya Raipur (C.G.). This FDP is sponsored by ATAL scheme, AICTE Delhi.

Dr. Vivek Tiwari, Organizer of the FDP gave insight to topics on "Basic fundamentals and terminology of AI", "Data imputation", "Dimensionality reduction", "Linear discriminant analysis". He also handled sessions on "Basics of machine learning and terminologies", "Classification, Clustering, Linear and polynomial regression" with Hands-on.

There was also a session on "Beauty of inner engineering through Yoga and meditation" taken by Dr. Rajiv Nair to motivate the participants. The topics on " An overview of heuristics and meta heuristics" was handled by Dr. D. P. Vidhyarthi and "What is Data science?" by Dr. Aruna Tiwari.

Dr. Muneendra Ojha elaborated the topic "Unsupervised descriptive data analytics" with demo. Dr. Suryaprakash. IIT, Indore talked about " Biometric template security" and Dr. Kuldeep Singh Patel about " Financial mathematics - Academia and Industry". A Quiz was conducted on the last session of day 5, for 50 marks.
Overall the FDP was very informative and gave foundations to do research on the data exploration, preprocessing and representation.

Dr. T. T. Mirnalinee
Dr. J.Bhuvana
Dr. B. Bharathi
Dr. R. Priyadharsini
Ms. S. Manisha

FDP COURSE ON GIS & REMOTE SENSING

The Online AICTE-ATAL FDP course"GIS & Remote Sensing" was conducted on 23rd – 27th November, 2020 by Government Engineering College, Bilaspur. The focus of the FDP "GIS & Remote Sensing" is to understand in detail about the Geographical Information Systems (GIS) which is a computer system that captures and processes the data related to positions on Earth surface. The information capture is done by the technology called Remote Sensing which detects and monitors the physical characteristics of an area on the Earth by measuring the reflectance and radiation emitted at a distance using high resolution cameras and sensors attached to the satellite.

The first day started with the inaugural function followed by the lectures pertaining to the Basic principles of Remote sensing, Spectral and Visual Image Representation and Data Image Processing by Ashish Joshi, Dr. Hina Pandey, Ms. Minakshi Kumarfrom Indian Institute of Remote Sensing (IIRS), Dehradun. The Second day sessions covered, detail information about GIS and GPS by various experts from IIRS Deharadun.

Third day talks were on Investing in Space-ISRO's Odyssey, Application of GIS & Remote Sensing and Demonstration on QGIS by Dr. AlokShrivastav, URSC-ISRO, Dr. Saikat Paul, IIT Kharagpur and Dr. Prasun Gupta IIRS Dehradun respectively.

Fourth and fifth day lectures were delivered by various experts -Dr. Ishtiyaq Ahmad and DrAmba Sethi NIT, Raipur Dr. Manish Kr Sinha, CSVTU Bhilai and Dr. Vinay K Pandey IGKV, Raipur. The topics covered were, Applications of GIS in domains such as Natural Resource Planning, water resource management, UAV and its application. Altogether, the entire FDP course was very useful and informative.

Dr.V.S.Felix Enigo
Dr. B.Prabavathy
Asso. Prof/ CSE

ONLINE FDP ON ARTIFICIAL INTELLIGENCE

AI is an imitation of human intelligence processes by machines. The intelligence processes include learning, reasoning, and self-correction. They discussed the specific AI applications include more about expert systems and machine vision. After understanding what is artificial intelligence, the industry experts explained how it works and what are the components that make machines work intelligently. The experts discussed the Smart and Sustainable Energy which tells about how to optimize existing devices, systems and platforms especially in utilizing green energy as a replacement of non-renewable energy. Also we had the discussion of AI in Smart buildings and cities in which the typical layout of smart green building with the capabilities of AI in building design is learnt. Dr Srikanth Prabhu gave more interesting case studies in the field of Smart Grids and Cyber Forensics. Also Dr. V. Kirubakaran, Gandhigram Rural Institute gave the research direction in the new generation of AI. Dr. Venkata Kirthiga, NIT, Trichi discussed the challenges and opportunities in leveraging Industry 4.0 in the field of Cyber Physical Systems. Finally, the various fields of experts concluded with the Optimization in an assorted applied areas of AI with respect to Heuristic Search, Computer Vision, Adversarial Search, Fuzzy logic, NLP, Knowledge Representation, etc., . Also the applications of AI technologies in diverse fields like Energy, Human Services, Marketing, Telecommunications, Transportation and Inventory/forecasting of different organizations are discussed.

Dr. K. Lekshmi

Asso. Prof/ CSE

AICTE –ATAL FDP ON "INTERNET OF THINGS"

We Dr. S. Saraswathi, Dr. K. Madheswari attend online AICTE –ATAL FDP on "Internet of Things" from 21st to 25th December, 2020 organized by Department of Computer Science and Engineering, Kongu Engineering College, Perundurai, Erode, Tamil Nadu. The sessions were handled by renowned Speakers from academic and Industries. The FDP gave us an insight into Internet of Things (IoT). It comprehended various sensors, software, and other technologies like connectivity, networking and communication protocol. Demo Session helped us to understand real time problems and a simple IoT based solutions for that. One interesting project was the remote doctor and the automatic tablet lending machine for a village in Rajasthan. Various real-time problems and the solutions were discussed. The Hands-on session using the online simulator made us to understand the installation of Arduino IDE and basic programming for Arduino. The last session was a Quiz which tested our understating.

ATAL FDP ON "BLOCKCHAIN"

The Atal FDP on Blockchain was organized during Nov 2-6, 2020 by Indian Institute of Information Technology, Dharwad, Karnataka, and the coordinator was Dr. B. Jayalakshmi, Assistant Professor, Department of Computer Science and Engineering.

On Day1, we had 2 speakers, and the first speaker was Dr. Kannan Srinathan from IIIT Hyderabad, and he introduced the amalgamation of Distributed systems, Cryptography and Game Theory. The second session was on Basic crypto primitives for Blockchain by Dr Ruhul Amin from IIIT Naya Raipur.

On Day 2, Bit Coin Architecture was discussed by Dr Rajendra Heggadi from IIIT Dharwad. The afternoon session was handled by Dr Nidal Nasser, Alfaisal University, Saudi Arabia on Blockchain technology applications and challenges.

On Day 3, Blockchain technology and its potential application in Intelligent Transportation Systems by Dr Ashok Kumar Das from IIIT Hyderabad. He was ranked in the top 2% scientists from India (all fields) in the area of Networking & Telecommunications. The afternoon session was excellently handled with numerous case study on Blockchain technology and crimes by Mr. Anupam Tiwari, Research Scholar,G D Goenka University.

On Day 4, Dr S Venkataraman, Scientist H, Group Director(retd), ADRIN discussed various consensus algorithms used in Blockchain. The next session was handled by KrishnasuriNarayanam, Senior Research Engineer, IBM on Hyperledger Fabric and its applications in Walmart and Sea Carriers. The next session was handled on Security Perspective in blockchain by Dr Pavan Kumar, IIIT Dharwad.

On Day 5, Raghavendra Deshmukh from Walmart Global Tech gave the application and use case of blockchain in Walmart. The next session was on Art of Living by Ms. Ramya, where she stressed the need for Work Life Balance. Overall the FDP went very well, and all the sessions were well thought and organized.

Dr. Balasubramanian V.
Asso. Prof/ CSE

FDP ON DEEP LEARNING USING CONVOLUTIONAL NETWORKS AND SEQUENCE MODELS

Dr. P. Mirunalini attended online ATAL sponsored FDP on "Deep Learning using Convolutional Networks and Sequence Models" with a focus on exploring deep learning architectures for image and text processing. The programme has been organized by Rao Bahadur Y. Mahabaleswarappa Engineering College, Bellari Karnataka.

The first day of the session was handled by Dr. Neha Sharma on "Introduction To Deep Learning". She introduced about the different deep networks starting from the simple neural network to complex network such like AlexNet, Google Inception model which helps in transfer learning. Dr Basavaraj Anami handled a session on "Advances In Machine And Deep Learning", he elaborated the differences between the machine learning and deep learning networks with Hands-on using Python.

Mr. Kumar Swamy V gave insights to topics on "Comprehension and Implementation of Image Classification Using CNN Through Matlab ". He elaborated the libraries and functions in Matlab for implementation of deep architectures. The next session was on "Optimal Deep Learning Model for Classification of Lung Cancer On CT Images" by Dr Sachin Nandan Mohanty, Manipal Institute of Technology. She discussed about the image capturing techniques and also she gave the insights of which model will be suitable for lung-CT images to identify the presence of cancer. The third session was on "Case Studies Deep Learning For Q& A Systems " handled by Dr S.G Kanakaraddi who discussed the importance of attention models and sequence models for text processing.

A session on "Impact Of Machine Learning On Routine Clinical Imaging /Diagnosis" was handled by Dr.Anita H. She discussed about the different features of images, how to obtain the features using image processing techniques. Session 2 was on "Mental & Emotional Development ,Stress Management ,Mediation, Human Values, Ethics, Health &Happiness " by Smt. Mamta Kurnool. Madam has discussed about the stress and way to handle it, she taught simple yoga and meditation and also explained about the importance of it. She also explained how to teach human values and ethics for the students. The last session was on "Applications of NLP In Sentiment, Disaster And Social Media" by Dr Jyoti Prakash Singh, NIT Patna.

There was a session on "Emotion /Sentiment Analysis Of An Example Employee.(Glass Door Rating And Comments Data)" which was handled by Mr. Mon. He gave hands-on of the sequence model for emotion and sentiment analysis using reviews obtained from glass Door Rating. Another session on "Sequence Modelling with Deep Learning" was handled by Dr. M P Pushpalatha where she discussed different seq-to-seq architectures such as LSTM and bi-LSTM. The last session of the FDP was handled by Er. Bindu Swetha Pasuluri " IPR with Background of Neural Networks And Deep Learning".

On last day of the FDP a quiz was conducted for 20 marks. The FDP was very much informative and explains the models of deep architectures for different applications of images and text.

FDP ON "ARTIFICIAL INTELLIGENCE - MACHINE LEARNING APPLICATIONS"

We attended a five day ATAL FDP on "Artificial Intelligence - Machine Learning Applications", from 23rd to 27th November 2020 at ABV - Indian Institute of Information Technology and Management, Gwalior through online mode.

The FDP covered topics like "Machine learning types", "Time series analysis", "Hidden Markov models", "Feature Extraction techniques" and "Deep Learning models". Detailed lectures with hands-on solving of problems were given by resource persons from IIT Mandi, IIT Patna, JNU Delhi, IIT Allahabad, IIITM Gwalior and JIIT Noida.

Apart from the introductory topics in deep learning models, several applications in which those models could be applied were also discussed.

All the resource persons were eminent speakers who are involved in research in several machine learning and deep learning domains and they delivered their lectures in an insightful manner that even budding researchers could easily understand. They were eager in clarifying each and every doubt asked during the session. The final session had a quiz from the lectures delivered to test our level of understanding.

Ms.S.Rajalakshmi, Ms. A. Beulah, Ms.S.Lakshmi Priya and Ms.S.Angel Deborah

FDP ON 'CLOUD TECHNOLOGY'

I am indeed much honored and feel glad to write about the ATAL FDP Programme on "Cloud Computing Using AWS" under Cloud Technology from from 23rd to 27th November 2020. First and foremost, I thank the institution KKR & KSR Institute of Technology, Karnataka for giving me the opportunity to be a part of the FDP. As a participant I realized that the five day workshop was designed to be more focused and oriented towards the hands-on experience in Amazon Web Services (AWS) Cloud environment.

The pilot day started off with the Introduction to Cloud Computing by Dr. Shyamal Kumar DasMandal, Associate Professor, KITS Institute followed by the handson session by Mr. Praveen Sripati, Free Lancer, explained the steps to kick start with AWS Cloud. The Afternoon session was handled by Dr. Ferdous Ahmed in Amazon EC2 (ElasticCompute Cloud) instances and how to configure the computation in ECS instances.

Second day started with creating and configuring the Load Balancer, Auto Scaler and Route53 in AWS Cloud followed by the creation of Simple Storage Service (S3) for data storage purposes. Having created all the basic components to configure the AWS cloud, the mapping of EC2 instances with that of S3 storage was demonstrated and tested with several test cases by Mr. Praveen Sripati, Free Lancer. The day ended with configuring the Security and Network Management components present in AWS.

Third day started with the Lecture on AI and Machine / Deep Learning introduction and explored the problems in those domains that can be addressed by AWS Cloud to achieve greater performance. The hands-on session on Monitoring Services &Serverless computing with AWS (Lambda) was demonstrated by Mr. Praveen Sripati, Free Lancer.

Fourth day kick started with the demonstration of configuring several Application services such as Simple Queue Service (SQS), Simple Notification Service (SNS) and Simple Email Service (SES) by Mr,B.Siva Kumar, Free Lancer. The second session continued with the Introduction of Databases supported in AWS and how Big Data in handled and analytics is performed in AWS cloud by Dr. G Dileep Kumar,Associate Professor, KITS Institute. Dr. D Veeraiah of KITS explained and demonstrated the Automationin AWS cloud to end the talk of the day.

The Final day sessions were handled by Mr. Praveen Sripati, Free Lancer as a continuation of putting all the components together that was discussed in the last four days and shown the complete flow of creating, configuring, mapping and monitoring the full- fledged cloud environment. It was a thorough learning experience that enhanced the skills and I profusely thank the organizers for making the journey of learning so memorable.

Dr. N. Sujaudeen
Assistant Professor,
Dept. of CSE.

FDP ON 'SMART CITIES'

I have attended the five day AICTE Training and Learning Academy Faculty Development Programme (ATAL FDP) on '5G LTE Wireless Communication systems for NB-IoT: MIMO, Massive MIMO Systems, Cooperative Communication and IoT' under Smart Cities hosted by the Department of ECE, Lendi Institute of Engineering and Technology, Andhra Pradesh from 7th to 11th December 2020. I realized that it was a need-based initiative of ATAL that aimed at upgrading the technical and conceptual skills of the participants in the 5G Wireless Network Technology for building Smart Cities.

The first day kick started with the Introduction to Wireless Communication Systems based on the signal processing and communications perspective by Prof.Dr.G.Sasibhushan Rao, Senior Professor, Andhra University, Visakhapatnam. He explained the nuances of multi-path propagation in wireless communication and its effect in signal quality at the receiver with test cases. He also gave a Lecture on the Basic Principles of Cellular Communication Systems that covered the Evolution of Cellular systems from 1G-5G, its significant features, Generic architecture, Design aspects, Complexities and Limitations of current Cellular Systems. He gave insights on Multi Carrier Wireless Systems to overcome the issues. Dr.VenkataMani V, Associate Professor, NIT Warangal gave a talk on Introduction to MIMO, MU-MIMO Technologies in which she discussed about the transformation from 4G to 5G technology with use cases.

A special session on ART OF LIVING was taken by Dr. D. Vijaya Ganeshwar Reddy, Professor, Dr. B.R.K.R. Govt. Ayurvedic College, Hyderabad, on the title "Spirituality,

Ethics, and Health" in improving the Mind Management of the individuals and face real life problems at ease. Dr.Venkata Mani V gave the technical talk on Introduction to Beam forming in Wireless Communications in which she discussed about the finer details in OFDM and GFDM Modulation techniques and its usage in 5G Networks.

Dr.Neelakandan Rajamohan, IIT GOA delivered a talk on "mmWave and Massive MIMO Communication" to start the day. He explained the model of MIMO systems, principles of beamforming and the architecture of hybrid antenna system. A Lecture on "Cooperative Communication" was delivered by him in which he covered the basics of capacity and transmission rate analysis, Relay Systems and the ways of processing the data in the nodes with issues and challenges. Types of Cooperative Communication were discussed with their generic architecture and its limitations. Hands-on session to simulate the 5G Wireless Communication on Lab View was handled by Mr. Ganesh Miriyala, NIT Warangal.

Fourth day was stared with the Lecture by Dr.Neelakandan Rajamohan, on "Spectrum Sensing for Fading Channels" in which he discussed about various spectrum sensing techniques and its features and limitations. Dr.Prabhu Chandhar, Director, Chandhar Research Labs, delivered a talk on "Introduction to 5G New Radio technology" and gave a demonstration of 5-Nines Radio Network in 4G/5G Testbed.

Dr.Sowmya Prakash Das,IIT, Bhubaneswar delivered a talk on "Introduction to 5G New Radio (NR) Standard, LTE- Cat M1 and Cat NB 1 Standards for Narrowband IoT" in which she discussed about the physical layer components such as NR framework, MIMO frameworks with challenges and its performance. Dr.Debarati Sen, IIT, Kharagpur addressed the participants on the topic "Synchronization in distribution Massive MIMO systems for 5G and Beyond communication" to conclude the session.

My Sincere thanks to the Organizers for providing a well-structured programme, the pedagogy and the enthusiastic faculty that have widened the horizon of my vision in the adoption of 5G Technology to build Smart Cities.

Dr. N. Sujaudeen
Assistant Professor,
Dept. of CSE.

NATIONAL WORKSHOP ON "DEVELOPMENT OF DECENTRALISED IOT SYSTEMS USING BLOCKCHAIN

AICTE Training and Learning (ATAL) Academy, a five days National Workshop on "DEVELOPMENT OF DECENTRALISED IOT SYSTEMS USING BLOCKCHAIN",is organised in National Institute of Technology, Puducherry from 26.12.2020 to 30.12.2020.

There are three sessions per day, and afternoon sessions are hands-on. Sessions are handled by the expert persons from Anavadya Softech (P) Ltd, Bengaluru.

Day 1 - A detailed introduction to basic concepts of blockchain is done in the forenoon session, and the afternoon session was on crypto currencies and bitcoin.

Day 2& 3–The day is started with a quick overview of blockchain concepts and the speaker introduced the Hyperledger Fabric and explained the permissioned blockchain tool. Both days we worked on Hyperledger Fabric, these tasks are carried out, installed Hyperledger Fabric tool in VM, created an underlying network of peers, instantiated smart contract in all peers and executed it.

Day 4 –Blockchain and IoT is introduced, and speaker elaborately explained how blockchain can be used in IoT applications and gave demos on some IoT applications.
Day 5– Quick review of topics that are learned for the last four days are done and a test is conducted (a requirement for obtaining certificates from ATAL, MHRD).

The objective of this FDP is to provide knowledge of developing decentralised IoT systems using Blockchain. IoT systems collects lot of data from sensors which goes to a centralized decision-making system which creates a bottleneck. This FDP helped us to get exposure about Blockchain and the tools – Hyperledger Fabric and to understand how Blockchain with IOT can help to overcome the bottleneck. Most of the sessions were demo and handled by the expert persons who are working in that area.

Dr. Suresh J
Asso. Prof. / CSE

FDP ON "DESIGN CHALLENGES IN VLSI AND EMBEDDED SYSTEM FOR IOT APPLICATIONS"

I Attended the AICTE Training and Learning (ATAL) Academy Sponsored Online Faculty Development Programme on "Design Challenges in VLSI and Embedded system for IoT Applications" during 23-27 November 2020. The FDP was organized by Indian Institute of Information Technology Tiruchirappalli.

Various resource persons from NIT Trichy and Anna university discussed different aspect of security, design challenges, and SoC applications. Dr. D. Vaithiyanathan, Head of the Department/ECE, National Institute ofTechnology, Delhi talked about the topic "Introduction to Embedded System ". Dr. M. Bhaskar, Professor/ECE ,National Institute of Technology, Tiruchirappalli discussed about IoT Basics. Dr.T.N.Prabakar Professor/ECE, Sri Sairam College of Engineering, Anekal, Bengaluru handled a session on Low power Design and High Speed techniques. The other resource persons were Dr. G. Seetharaman, Associate Professor/ECE, Indian Institute of Information Technology, Tiruchirappalli, Dr.R.Kumar, Professor/EIE, National Institute of Technology, Nagaland, Dr. S. Moorthi, Associate Professor/EEE, National Institute of Technology, Tiruchirappalli, Dr.Varun P. Gopi, Assistant Professor/ECE, National Institute of Technology, Tiruchirappalli, Dr. S. D.Sudersan, Executive Director, Centre for development of Advanced computing (C-DAC), Bengaluru, Dr.G.Lakshminarayanan, Professor/ECE, National Institute of Technology, Tiruchirappalli, Dr.S.R.Balasundaram, Professor/CA, National Institute of Technology, Tiruchirappalli, Dr.K. K. Soundra Pandian, Scientist,Ministry of Electronics and Information Technology,New Delhi and Dr. B. Venkataramani, Professor (HAG)/ECE, National Institute of Technology, Tiruchirappalli. The main focus of FDP was on the design of IoT applications for industry 4.0.

Dr. Sarath Chandran K. R.
AP /CSE

FDP ON 'INTERNET OF THINGS (IOT)'

Under current circumstances of COVID-19 pandemic, the education system has seen a new dimensional transformation from classroom teaching to online classes. Although the new generation of students can gladly blend in to the virtual mode of teaching, the teachers' fraternity is given with a chance to enhance their knowledge through virtual teaching methods. To do so, I have attended the five day AICTE Training and Learning Academy

Faculty Development Programme (ATAL FDP) on "Building Smart Things by Leveraging IoT" under IoT Technology hosted by the Department of ECE, JNN College of Engineering, Shivamogga, Karnataka from 4th to 8th January 2021.

. Manjunatha P, Principal, JNNCE gave a brief talk on "Introduction to IoT and Sensors" to start the technical session on the first day. He along with Mr. Prashanth G S gave a demonstration on "Installing Arduino IDE. Interfacing sensors, actuators with Arduino Uno (IR, LDR, PIR)" to give a real feel on the configuration of the Arduino Uno board. The session continued in the afternoon to test with various sensors such LCD,Temp and Servo motor.

Second day started off with the Lecture on Node MCU Controller Architecture and the hands on session in Configuring Arduino IDE for Node MCU board usage. How to include library packages to Node MCU both online and offline. Node MCU as server, Access point Network Scanner was given by Mr. Benak Patel, JNNCE. He along with Mr. RavitejBalekai, GMIT, Davangere, shown the demonstration of Installing Onboard LED blink, Interfacing Sensors and actuators. Introduction to Blynk App was given and uploaded the sensor data on to the open source Cloud platform, adafruitio. A talk on the Introduction of theMessage Queue Telemetry Transport (MQTT), messaging protocol used by many IoT devices was delivered and a sample communication network was created with Node MCU Controller.

Dr. Chethan K R, JNNCE delivered a Hands-on Session on LinuxOperating System and the usage of Python Scripting Language. Mr. Benak Patel gave a talk on "Introduction to Raspberry Pi and the Interfacing Sensors, Actuators with Raspberry Pi" in which he demonstrated the working model of the controller with various sensors.

An extensive demonstration on "Quick prototyping: Building a quick POC of your idea. Using GDB and Autodesk TinkerCAD" was given Mr. Koushik R Udupa, Ekathva Innovations Pvt. Limited,Shivamogga. Dr. Anandbabu Jaddressed the Security Aspects in IoT in the lecture and identified the areas in which the security is compromised in IoT technology with suitable ways to overcome it. Dr. Aravind S T, Positive Mind Clinic, Shivamogga delivered a talk on "Stress Management" in which he explored the issues, challenges and possible solutions to live a better life.

Dr. Kiran M, NITK, Surathkal, started the fifth day with the topics, "Blockchain Applications with IoT" and "A deeper look at IoT in smart city and other applications" in which he explored the usage of Blockchain technology to secure the data in IoT devices to build the vision in creating Smart Cities. My sincere thanks to the resource persons and organizers for providing deep insights on the IoT technology and thereby enhancing the knowledge of the participants as a whole.

Dr. N. Sujaudeen, AP/CSE

FDP ON END TO END PROCESSES IN DATA ANALYTICS

We attended the virtual FDP on End to End Processes in Data Analytics, organized by the Department of IT, SSN College of Engineering which was supported by IEEE & ACM, Chennai Chapter, during November 2-6, 2020. The FDP sessions were designed to expose the advances which have evolved in each process / stage of data analytics. Apart from conveying the theory concepts, this event focused on revealing the industry practices of these concepts.

Dr. V. Venkatesh from Chennai Mathematical Institute gave a good start to the FDP through his introductory talk on "Data Analytics - Key Enablers and Associated Challenges" covering the basics of big data and its storage challenges. Dr. E. M. Malathy, SSN CE added to this session by highlighting the challenges in acquiring data specifically in Wireless Networks. The following session was on "Data Preprocessing Concepts" with interesting demonstrations from Mr. N. V. Laxmi Narayen, Data Scientist, Logitech. Professor A. Kannan from VIT, Vellore gave detailed lecture on "Supervised Machine Learning Techniques" followed by a demo on applying SVM to agricultural applications " Early Diagnosis of Plant Diseases" by Dr. S. Poornima, SSN CE. Dr. S. Mohanavalli, SSN CE gave a talk on "Applying Data Science in Unsupervised Learning" and illustrated the effect of statistical parameters in learning the patterns in a data population, using experimental runs with Spectral Clustering.

The next day's session was on the hot topic of analytics - "Deep Learning". Dr. Vijay John, from Toyota Technological Institute, Japan shared an interesting ongoing project in Toyota research lab during his talk on "Fundamentals of Deep Learning and their application to Autonomous Driving". The second session of that day was on "Deep Learning Models for Real Time Applications & Demo" was content rich, with Prof. Shahina's explanation about RNN concepts followed by Dr. N. Sripriya's lucid illustration on working of CNN with demonstrations for using CNN and RNN on Medical images and Text processing. Mr. S. Vigneshwaran, Tax Consultant, Ernst & Young demonstrated the power of visualization through his talk titled "Data Visualization Concepts & Tools". The second session was an interesting and interactive session with active participation on "Tableau - Interactive Demo" by Dr. K B Sundhara Kumar, SSN CE. Mr. C. Sricharan, Team Lead, GAIN Credit gave a talk on concepts employed in "Sustainability of Machine Learning / Deep Learning Models". Dr.

K B Sundharakumar gave another interesting session on "Deployment of Machine Learning Pipelines in Cloud" in the scope of reusability and abstraction of ML models by end users.

Dr. D. V.V. Prasad and Dr. K. Vallidevi

NEURAL NETWORK AND DEEP LEARNINGS

We attended the virtual Atal FDP on Neural Network and Deep Learning, organized by the University School of Information, Communication & Technology, Guru Gobind Singh Indraprastha University (GGIPU), during November 23-27, 2020. The FDP sessions were designed to expose the advances which have evolved in each process / stage of data analytics. Apart from conveying the theory concepts, this event focused on revealing the industry practices of these concepts.

On 23th, we had a centralized inaugural session through youtube and followed by that we had a session on introduction to neural networks by Prof. Pravin Chandra of GGIPU. Followed by this session, Prof. C.S. Rai of GGIPU delivered a talk on the Neural Networks perspective from Biological Neural Network to Artificial Neural Network.

24th Nov, was handled entirely by Prof. R. K. Aggarwal from Jawaharlal Nehru University (JNU) with the concepts of Neural Networks and Deep Learning Design and Architecture.
On 25th Nov we had handson Exposure for Implementation of Neural Network and Deep Learning using MATLAB for which we had experts from Mathworks. On the same day we had a session on Image Processing using Neural Networks by Dr. Ravindra Kr. Purwar of GGIPU.

On 26th Nov, a Hands-on session for the implementation if Neural Networks using Python was handled by Rajesh Prabhakar. This session was further extended by him on 27th with the various applications of Deep Learning and Neural Networks using Python. Further a session on Advances in Artificial Neural Networks for Person Identification using Face Images by Dr. Virendra Prasad Vishwakarma of GGSIPU.

On 27th Nov, a session on “Life in Spirituality” was handled by B. K. Vidhatri which was intended to help us have a balance between the spiritual life and our busiest career life. Followed by this session we had our assessment based on which the certificates were generated later.

Dr. D. V. V. Prasad, Dr. R. Kanchana and Dr. K. Vallidevi

APPROVED INTERNALLY FUNDED FACULTY PROJECTS 2020

S.No	PI / Co - PI	Title of the Project	Duration
1	Dr. Suresh J Dr. Venkata Vara Prasad Dr.V.Balasubramanian	Blockchain enabled IoT asset tracking and management	18 Months
2	Dr. G. Raghuraman Dr. S. Kavitha	Virtual smart monitoring system for students using emotion recognition	3 Years
3	Ms. Angel Deborah Dr. R. S. Milton Ms. S. Rajalakshmi Ms. M. Saritha	Fine-grained emotion recognition system for counselling	2 Years
4	Mr. N. Sujaudeen Ms. S. Lakshmi Priya	Storage and processing of streaming data for smart meter application	30 Months

USING XILINX ALVEO CARDS TO ACCELERATE DYNAMIC WORKLOADS

The program was mainly about the Xilinx's solutions to accelerate the dynamic workloads. Program discussed about Xilinx Alveo accelerator cards that helps to achieve the highest performance, accelerate any workload, and deploy solutions in the cloud or on premises for data center workloads. Mrs. Roli Srivastava from CoreEL Technologies Pvt. Ltd gave a clear insight into the Alveo accelerator cards and their advantages as well as the available software solutions stack. They also demonstrated how to run designs on Alveo Data Center accelerator cards using Nimbix Cloud and the Vitis unified software platform.

Dr. Sarath Chandran K. R.

AP /CSE

REACHING THE MILESTONE

All praise is due to the Almighty. The fulfilment of conquering a PhD-level challenge is momentous in a person's life. I successfully defended my thesis on "Design of Cloud MiddlewareFramework for Resource Management" under the Supervision of Dr. T.T. Mirnalinee, Professor, Department of Computer Science and Engineering, SSN College of Engineering, Chennai. The public Viva-Voce Examination was conducted on 04.11.2020 in CSE Conference Hall and through Zoom online platform, in the presence of Dr.A.Kandasamy, Professor, Department of Mathematical and Computational Sciences, NIT Surathkal as Indian Examiner and Dr. G. Lakshmi Sutha, Professor, Department of ECE, NIT Puducherry, as subject expert member.

I wish to record my deep sense of gratitude and profound thanks to my research supervisor Dr.T.T.Mirnalinee, for her inspiring guidance and constant encouragement throughout my work. I am extremely indebted to the SSN Management for providing me an opportunity to pursue research. My Sincere thanks to the doctoral committee members Dr. P. Narayanasamy, Professor, Department of IST, PSG College of Technology, and Dr. V. Masilamani, Associate Professor, Department of CSE, IIITD&M, Chennai for their valuable suggestions. Most importantly, I would like to thank Dr. Chitra Babu, (Professor and Head,Dept.of CSE, SSNCE), my colleagues, friends and family members for their valuable support in attaining new heights and success.

Dr. Sujaudeen N.
AP/CSE

MY GREATEST ACHIEVEMENT

"Commit your way to the LORD; trust in him and he will do this"

By the grace of Almighty God, I successfully defended my thesis on "Study on diagnostic techniques for lumbar abnormalities from MR images" under the guidance of Dr. T. Sree Sharmila, Associate Professor, Department of IT, SSN College of Engineering. The public Viva - Voce Examination was conducted on 04.01.2021 in IT Seminar Hall and through online platform in the presence of Dr. Umarani J, Assistant Professor, Department of CSE, IIITDM, Chennai, (Indian Examiner) and Dr. S. Ravi, Associate Professor Department of Computer Science, Pondicherry University (subject expert).

I would like to thank my supervisor, for her keen interest, inspiring guidance, constant encouragement during my research work at all stages. My sincere thanks to DC members Dr. N. Venkateswaran, Professor, Department of ECE, SSNCE and Dr. C. Mala, Associate professor, Department of CSE, NIT Trichy for their valuable suggestions and support during my research. My sincere thanks to Metro Scans, Thiruvananthapuram, for providing the images. I especially thank Dr. V. K. Pramod, Trivandrum Medical College, for his guidelines in providing the doctor's perspective.

I place my sincere thanks to Dr. Chitra Babu (HoD/CSE), and Dr. T. Nagarajan, (HoD/IT), for their words of advice and encouragement. I would like to thank our principal and management for providing support to complete my research. I also thank my friends, colleagues and family members for their support to reach this achievement.

Ms. A. Beulah
AP/CSE

7-DAY VIRTUAL WORKSHOP ON "ISHA YOGA IN CHALLENGING TIMES"

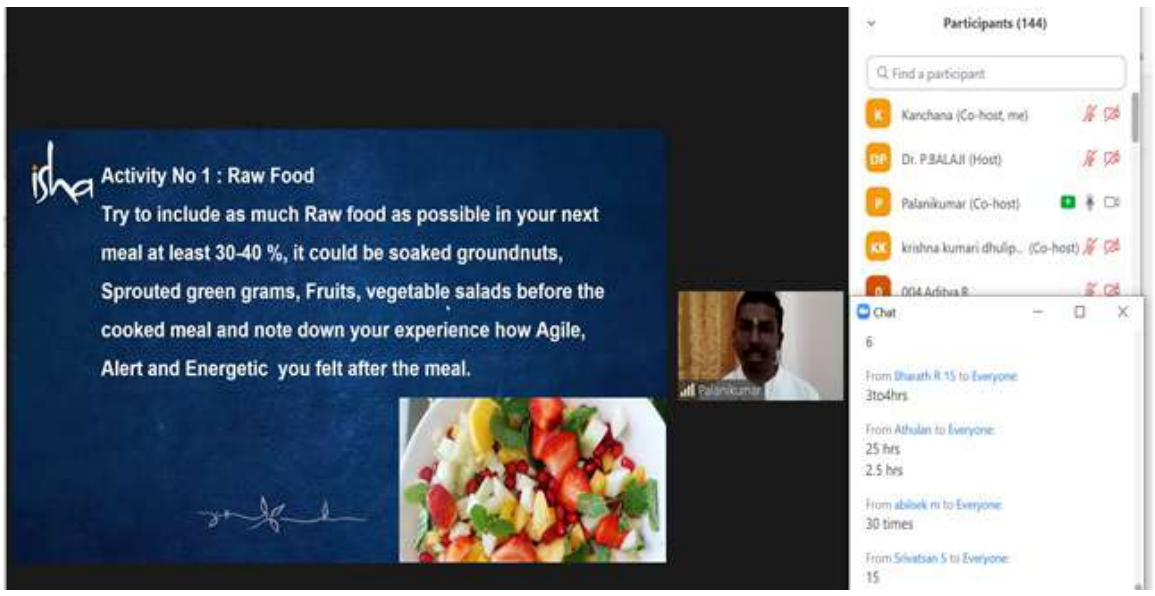
As a part of NSO activity, Dr. P. Balaji, Sports Director, SSNCE organized Yoga sessions for second year UG students. Dr. R. Kanchana coordinated the 7-day event with a certified Isha Hatha Yoga practitioner Shri. Palani. During this workshop, simple but powerful tools of UPA Yoga, Kriyas and Meditation offered by Sadhguru, Isha Foundation were taught.

Upa Yoga activates the joints, muscles, and energy system. Based on a sophisticated understanding of the body's mechanics, Upa Yoga dispels inertia in the body's energy and brings ease to the whole system. Just five minutes of Upa Yoga, a day, can transform your life! These simple practices are designed to help anyone cut through the struggle and walk through life with ease. The benefits of these session include: Enhances vitality, focus, memory, and productivity, Strengthens and stabilizes the spine , Stabilizes the body, mind, and emotions, Can relieve back pain, stress, anxiety, and tension, Can relieve from chronic ailments and improves overall health, Enhances teamwork and communication, Imparts a lasting sense of joy, peace, and fulfillment.

There were seven sessions on 7 days: Yoga for Immunity, Tips for healthy food habits, Yoga for Health, Tips for healthy food habits, Yoga for Success, Yoga for Wellbeing, Tips for healthy food habits, Yoga for Peace, Yoga for Joy, Love and Inner Exploration, Meditations for Mental Health.

The sessions were well received with an average of 160 students every day. The practices are incredibly supportive to the student community in this pandemic situation. It received excellent feedback from the students.

Dr. R. Kanchana
Asso / Prof, CSE



GOLD HONOUR @ IYMC: INTERNATIONAL YOUTH MATH COMPETITION

International Youth Math Challenge is a worldwide competition for high school and university students. The competition takes place in 3 rounds - Qualifier, Pre-final, and Final. In the competitions, the participants are usually tested on their basic understanding of the various disciplines of mathematics and how they can be applied in problem-solving. There are two categories - the high schools (with age less than 18) and university students (with age greater than 18). The evaluation is done separately for these two categories. The 2020 edition of the IYMC was its third edition. The qualifier round was announced in August and the deadline was set to mid of October. All participants were provided a set of six problems to solve over the course of this period. The first round was devised to access only the basic understanding of mathematics and therefore it was easy to clear. A special honorary mention was given to participants, including me, who made their submissions in LaTeX.

F-2020-E8277A4F7FB 14. December 2020

I M Y C

International Youth Math Challenge

Gold Honour

presented to

Praveen Kumar Ramesh

India

for an outstanding participation in the final round of the International Youth Math Challenge 2020. The final round was a supervised exam of thirty questions. Solving them required comprehensive skills in several mathematical areas. The participant scored 21 points and was placed among the top 5% of all participants.

F. Schneider — Fabian Schneider, International Coordinator

Rami Aly, Public Relations Manager

Two weeks after the qualifier results, the pre-finals began. All the qualified participants were given 10 problems from various branches of mathematics like Number Theory, Calculus, Algebra, Statistics, Trigonometry, Geometry, etc. In addition to this, the participants were asked to read a research paper and solve a set of problems using the concept explained in the paper. The questions in this round were more involved. Participants had 5 days to solve the problems and submit the solution. Only the top 20 percentile were qualified for the Finals.

Unlike the previous two rounds, the finals had objective questions and this round must be attended in the presence of an invigilator from the institute to which the student is enrolled. Dr. R. Sundareswaran from our Mathematics department accepted to invigilate me during the competition. The finals had thirty objective questions and each of the questions were to be answered within a strict window of 60 seconds.

I was able to qualify all the rounds in the 2020 edition of IYMC and was placed in the top 5 percentile securing the Gold Honor.

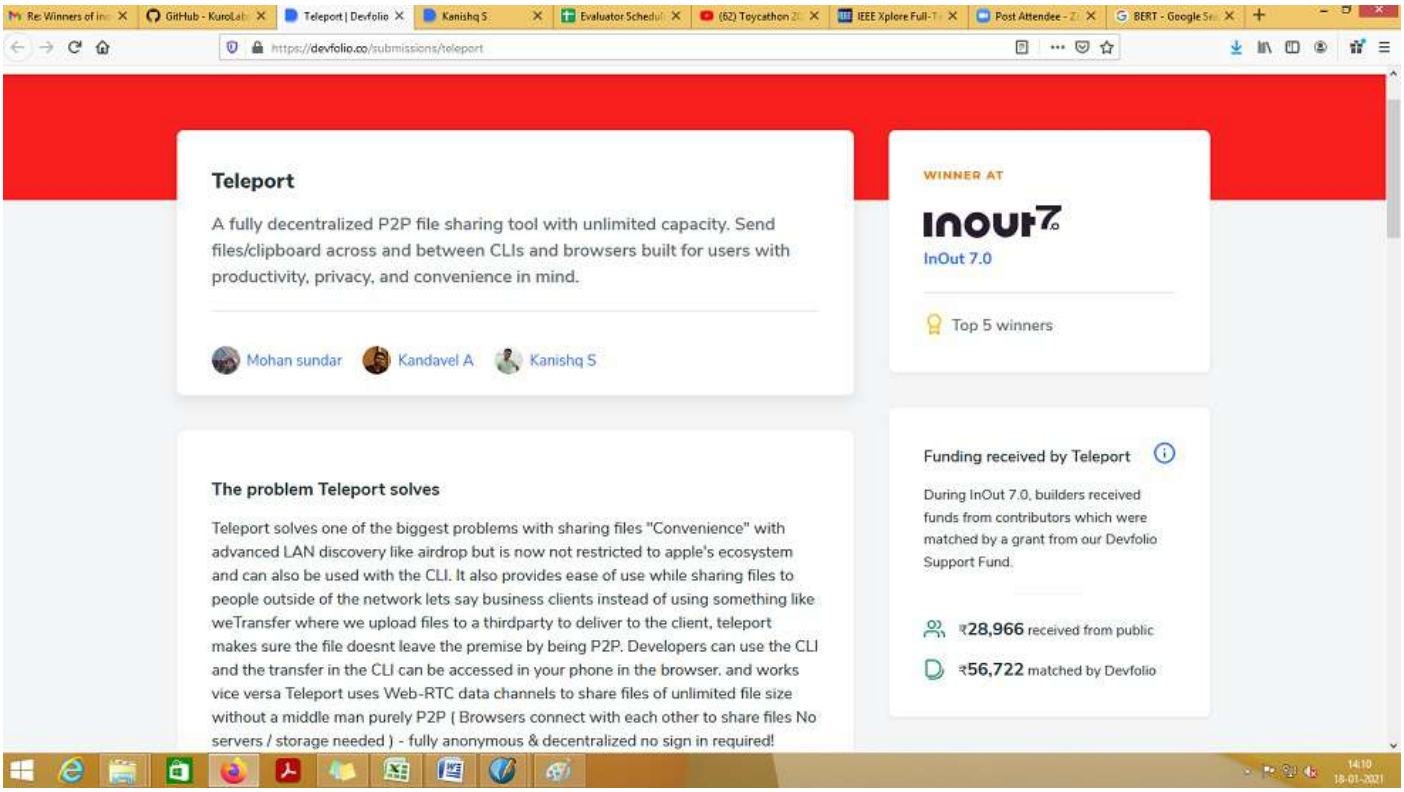
Praveen Kumar R
IV Year CSE

WINNERS @ INOUT 7.0

We (Me, Kandavel, and Kanishq) are glad to say that our product (Teleport) won the inout 7.0 edition, not did we win prizes worth of 200$ (3 x Amazon Alexa), but also bagged a seed grant of 1,165$ (85K) for our project. We are being connected with a lot of people who are really interested in our work and this is going definitely going somewhere exciting. For now, with the money we received, we decided to invest in QA testing to make the product stronger and more on infrastructure costs. Our vision for teleport is clear and people already love our idea, but to achieve the impact we imagined we needed money, competing in big community hackathons like this would help us move more forward towards making teleport a success. We received 29K in 10 days just through public donations from people after our tweet got a lot of impressions on Twitter.

Teleport solves one of the biggest problems with sharing files "Convenience" with advanced LAN discovery like airdrop but is now not restricted to apple's ecosystem and can also be used with the CLI. It also provides ease of use while sharing files to people outside of the network lets say business clients instead of using something like we Transfer where we upload files to a third party to deliver to the client, teleport makes sure the file doesnt leave the premise by being P2P. Developers can use the CLI and the transfer in the CLI can be accessed in your phone in the browser. and works vice versa Teleport uses Web-RTC data channels to share files of unlimited file size without a middle man purely P2P (Browsers connect with each other to share files No servers / storage needed) - fully anonymous & decentralized no sign in required!

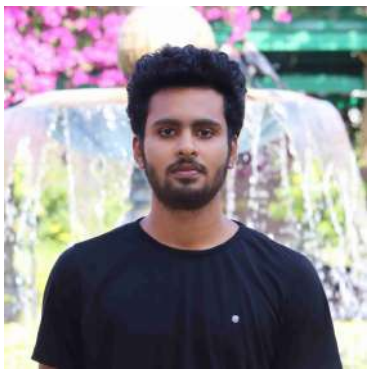
The below contains the description and demo of teleport.
https://devfolio.co/submissions/teleport



This idea is derived from something me and Nanda built last year https://github.com/KuroLabs/Airshare

which as of now have 16K downloads in pip and homebrew. The current project of ours solves a lot of convenience, performance, and other problems that prevented us from taking air share big as a commercial service, and that's how it all started.

Mohanasundar M



Kandavel A

Kanishq S

IV Year CSE

INFOSYS SUMMER OF IDEAS

Infosys Summer of Ideas is an ideathon to energize and ideate, to push limits of our abilities in a fun and imaginative environment. It is the new-normal for collaborating and conceptualizing. The Ideathon features thoughts and ideas with an objective to deliver agile and implementable solutions relevant for the post-COVID world.

I got to know about this wonderful opportunity from our college and I was determined to take part in it. The first selection round was an online assessment which consisted of analytical and logical reasoning-based MCQs and submitting our idea definition corresponding to the theme chosen. At the end of this process, 200 participants for each of the 10 themes were selected. The participants were from 35+ countries and were picked out of 1,00,000+ applicants.

The Ideathon started during the last week of September and continued till the first week of December. I had applied to participate in the Testing theme. Participants were divided into teams of five by the organizers. Unfortunately, two members of my team withdrew. So, my team consisted of only three members, namely, Ayush Mehta, RithikDutt and myself. I took up the responsibility of being the team leader.

Our problem statement was to ideate and come up with a solution to "Automate Virtual Reality Testing". We had to face a lot of challenges along the ideathon. Working on a problem statement in which I had no prior expertise was really difficult. Moreover, collaborating with unacquainted team members was really challenging. I came up with an idea and my team members consented to it so we started building the solution. Major steps taken to build the solution include automating test case generation, pre-processing generated test cases, automating VR application testing and consolidating test report.

All the teams were asked to make their final submission in the Infosys portal. Top 4 teams in the Testing theme were selected for the Grand Finale. I made the final presentation before the panel of judges and answered all the questions raised during the Q&A session. Our team was crowned the winners in Testing theme and each member of our team of three will be receiving a cash prize of 1000 dollars. My heartfelt thanks to our college for letting me know about this opportunity and special thanks to Prof. Sarath Chandran for motivating me to do this.

Official result declaration:
https://www.linkedin.com/posts/infosys_infosyssoi-forwardwithinfosys-ugcPost-6755460912548782080-ELaa
https://www.facebook.com/Infosys/videos/754772341817481/

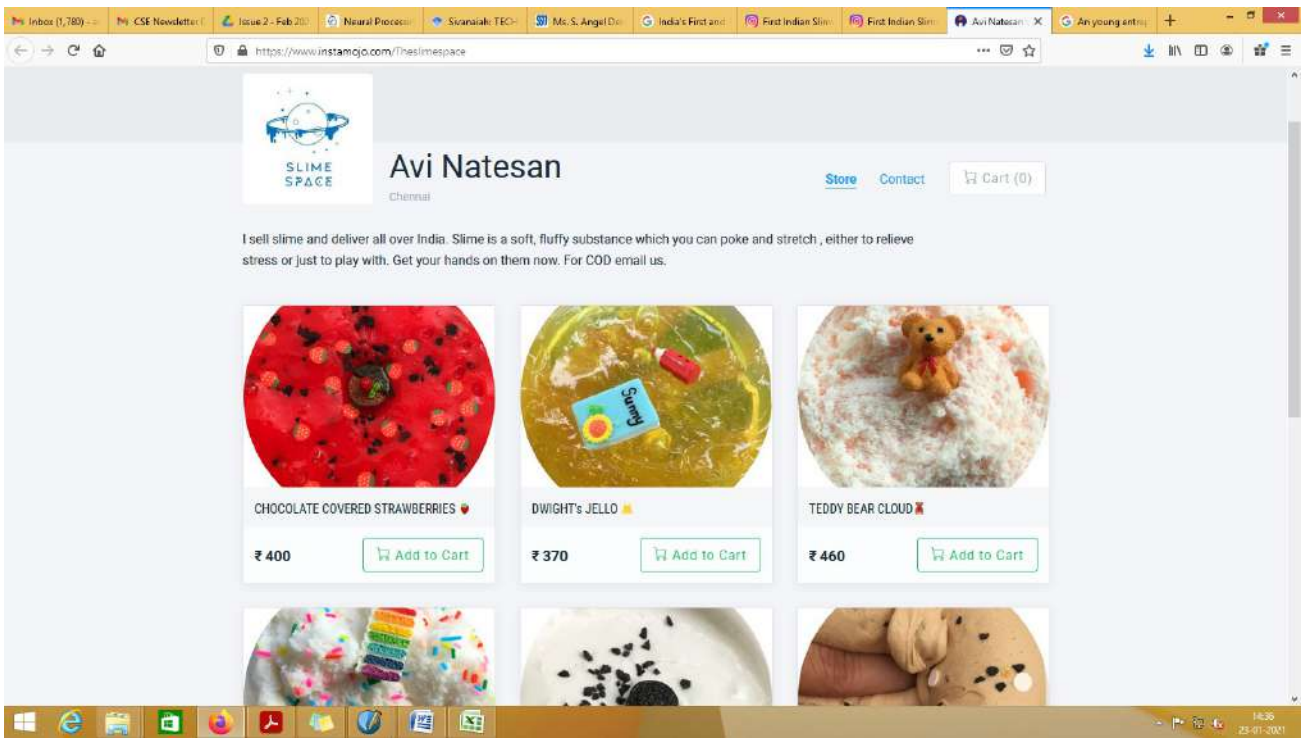
--Lakshmi Priya B
III Year CSE

AVI NATESAN - YOUNG ENTREPRENEUR

Avi Natesan is a 21 year old who is currently studying in the 4th year of the Computer Science and Engineering department at SSN College of Engineering.

At age 17, Avi started India's First and Largest Online Slime shop, where she sells 'slime' - a non-toxic, stretchy, versatile, viscous substance- which can be used as a toy for kids or a stress buster for adults. Slime provides satisfaction and ASMR tingles to the consumer. Unlike the store bought versions, these slimes are handmade by Avi and come in a wide range of textures [such as cloud, butter, glossy, thick, etc] and are scented various exciting flavours [such as chocolate, raspberry, peaches, etc]. They also have a long shelf life.

Ever since The Slime Space launched in 2017, it has sold over 10,000+ slimes across India. Avi single-handedly runs and balances her slime business along with her studies and college work.

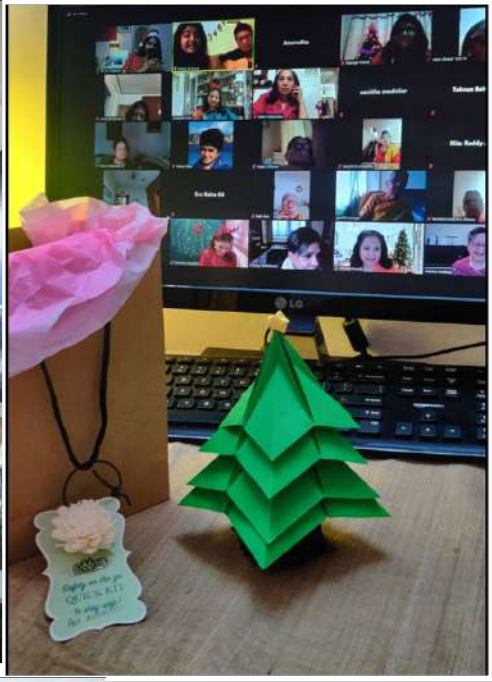


For her enterprising start-up, Avi has been featured in multiple newspapers and magazines such as The Hindu, Deccan Chronicle, Tamil Times, Economic Times and many regional newspapers. She was also interviewed and featured by Malayalam Manorama, Kerala's leading News Channel Network.

Featured in the Bombay Economic Times as one of the Top 10 rising online stores on Instagram (2020)

In addition to this, Avi is also a self-taught origamist. Her avid interest in paper folding has propelled her to fold intricate and complex models. She was invited to conduct three origami workshops in VIT University for the undergraduate engineering & architecture students. (2016-2019). She has also conducted origami classes for various non-profit organizations such as Chesire Homes, Avvai Homes and Andra Mahila Sabha. In addition to this, she also taught the underprivileged students of the prestigious Abhudaya, an NGO situated at SPJIMR , Bombay.

The pandemic did not stop Avi, as she gave an introductory course on origami to the First Year students who joined SSN in September 2020. Furthermore, Avi conducted several origami workshops for different organizations such as theInternational Women's Association (December 2020) and for the software company- Envestnet Yodlee (January 2021).



Her eclectic mix of talents and interests led to her being invited for a TEDx Talk Youth Conference on entrepreneurship and innovation at Vanarpettai. Avi talks about her entrepreneurial venture- The Slime Space and her recipe for success. The talk also comprises of Avi's fascinating work with origami and how she developed an interest for it. She also talks about how origami is more than just a hobby, as its concepts can extend to many scientific, technical, mathematical and architectural aspects.

This talk will be held online in February 2021 for school and college students across Vanarpettai, Tirunelveli. It will also be recorded for the official TEDx Talks YouTube Page.

Avikrishna Natesan
IV Year

ACM INDIA WINTER SCHOOL

"ACM India Online Winter Schools" offer students in-depth knowledge and exposure to research in advanced technology areas. Each school covers academic and applied research, and is taught by the best-in-class faculty from academia as well as industry. This year, schools were conducted on "Cyber Security", "Algorithms for Big Data and ML", "Natural Language Processing" and "Fairness, Accountability and Transparency in AI".

Applicants were asked to select two preferred schools and provide their prior exposure in the selected domain. Nearly 50 students from all over India were selected to participate in each of the school. I got selected to participate in "Cyber Security" school. This school was conducted during 21 to 31 December, 2020. It was hosted by VIT Vellore and Cisco India was the Industry Sponsor.

Cybersecurity is an ever-evolving field with opportunities waiting for everyone with the interest to learn more and develop their skills in this interesting and demanding topic. The objective of this winter school was to provide a forum for learning and discussing all aspects of computer and communication security, including foundational topics as well as cutting-edge research on security such as malware analysis and digital forensics.

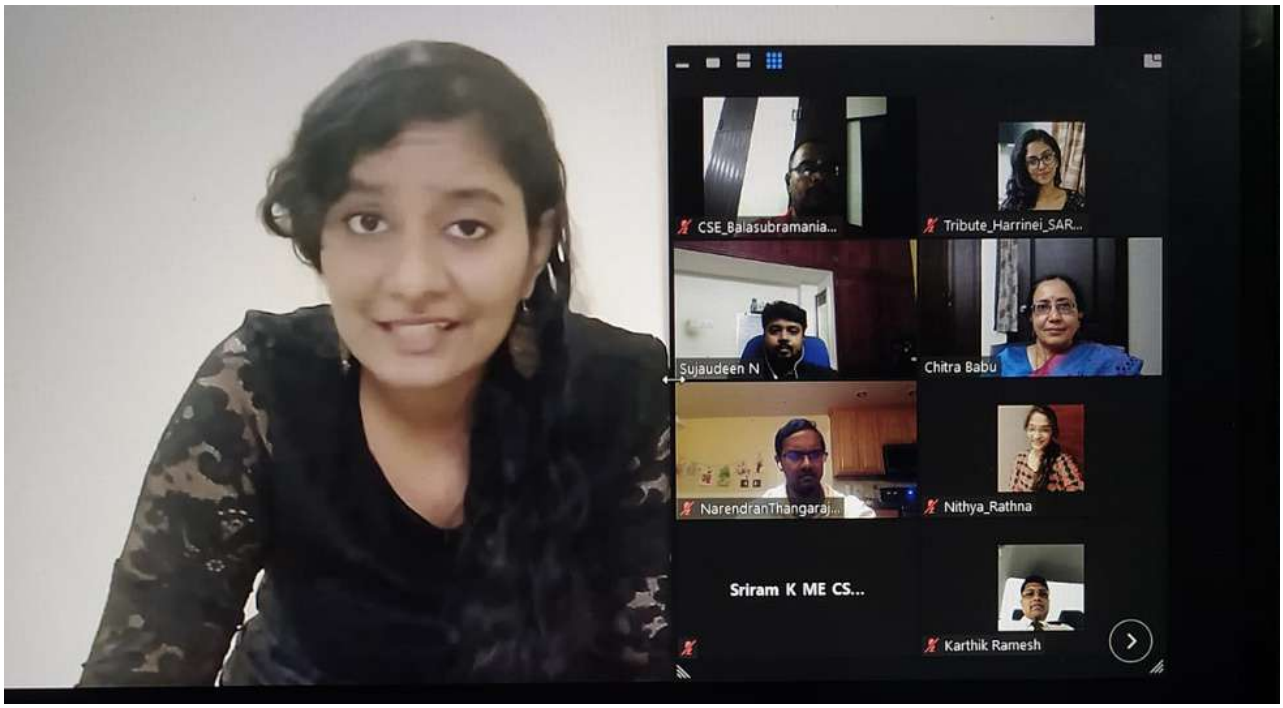
We were actively engaged in theoretical and practical development and demonstration and also on the enhancement of knowledge and training in identifying security vulnerabilities and protecting against cyberattacks. Each day consisted of lectures as well as tutorial sessions with hands-on problem solving experience. All the important concepts in Cybersecurity including Cryptography, Network Forensics, Securing Protocols, Network Security, Incident Response, Malware, Steganography, Vulnerability Assessment, Penetration Testing and Micro Architectural Attacks were covered exceptionally well. Each lecture, especially the ones conducted by Cisco professionals, was very informative and exceeded my expectations. Demonstrations by Cisco professionals were extremely interesting. All the resource persons did their level best to make us understand all the concepts. We were given two assignments and we made a poster presentation on the final day.

This was a great learning experience and I came to know a lot about Cyber Security through this Winter School. I thank our HoD, Dr. Chitra Babu for motivating us to take part in this esteemed Winter School and for recommending me for the same.

Lakshmi Priya B
3rd year

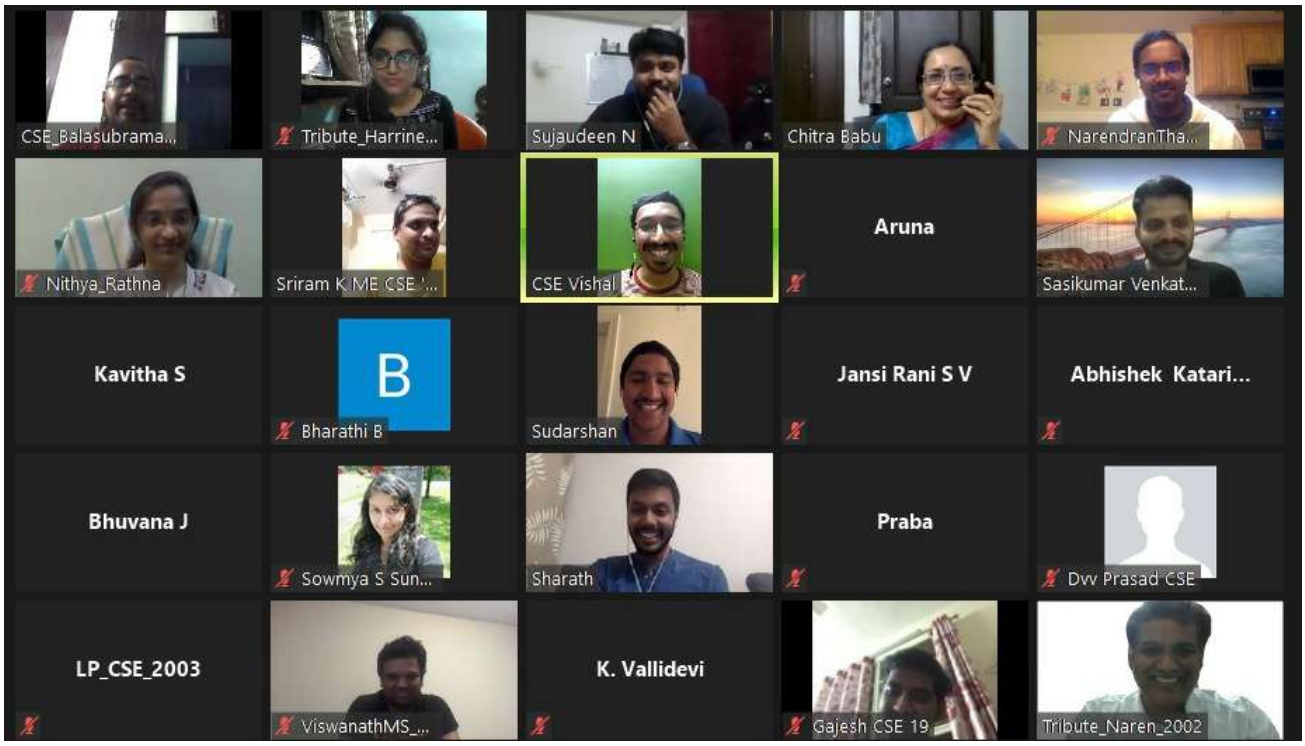
TRIBUTE' 2021

The Alumni meet of SSNCE, Tribute'21 took place on 2nd January 2021. Amidst the raging pandemic, this homely gathering was held online across nations. The main event began at 7:30 pm with three streams- Civil Services, HR, and Film Entertainment. Alumni from these fields took the stage to look back at how their stories of accomplishments. It was a quaint trip down the memory lane former students, teachers, and dignitaries were present to listen and cherish. Fun polls were conducted in between with very SSN questions like "Which is your favorite hangout spot?" Suffice to say it was a solid competition between the Clock Tower and Vishwaas lawn-side shop.



As the conversation, both on the main stage and comments slowly ended, the Alumni and faculty split into their respective department's break out rooms. The CSE breakout room blinked to life as people trickled in. With a small intro from the SAR, the session took off. Our HOD, Dr. Chitra Babu did a catch-up presentation outlining all that happened since the last Tribute. Different ways to incorporate Alumni into department activities were discussed. An organization is, after all, based on the coalition of those that stay and progress together.

A moving video session followed with clips of Alumni addressing their fellows. It was a perfect ice-breaker to the interactive session that followed. Teachers called out to their students who emerged grinning. Old backbench stories and light bulb moments were recollected. The laughter and spirit were as real as a virtual session could get. What was planned to be a two-hour event ended around 10:50 pm with a longing for more chatter. Well, until next year.



--Harrinei Kumaravel
Student Alumni Representative
Dept of CSE

UNIVERSITY RANKS - UG

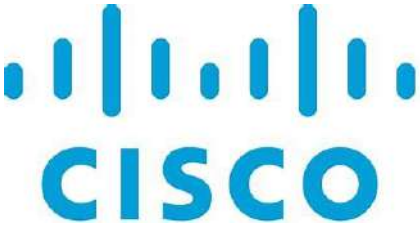
S.NO	STUDENT NAME		UNIVERSITY RANK
1	SARAH MATHEW		6
2	SNIGDHA V		7
3	KAVITHASRI A		18

PLACEMENT STATISTICS - (NOV 2020 - JAN 2021)

1)Harshavardhini L
2) Karthikeyan R
3) Kevin Thelly
4)Reenu Rita PS
5)Yamuna M

1)Harish Balaji
2)Hemanth Satheesh
3)Jayaraman N R
4)Naveen Narayanan
5)Pranav Raveendran

1)Rakesh M
2)Sneha G
3)Ssneha Balasubramanian
4)Sujin K
5)Ujjwel Balwal



1)Jyothishmathi CV

1)Mohanasundar M

1)Kevin Thelly

1)Ramkaushik R
2)Pavithra N

1)Kishore S M
2)Shri Sathvika V.A.

1)Priya J

1)Lokesh S

1)Akshay Ramakrishnan
2)Sanjana K

1)Arun S
2)Irfan Khan K
3)Rakshanaa R

1)Bhuvaneshwari P
2)Dinesh Babu
3)Hareni M
4)Malavika T

1)Abirami Duraipandian
2)Balaji Sasikumar
3)Naveena Muralidharan
4)Vaishnavi K

1)Monika N

1)Saadhana Lakshmi Narasimhan

1)Harini Raa

1)Harshavardhini L

1)Mohanram P.B.
2)Sheikh Pervez Musharraf A

MOSQUITOES, COTTON CANDY AND CINEMA

(Won FullyFilmy's blog contest on nuances of Cinema.)

Cinema is art, they say. An expression of the highest order. Mirth and melancholy in motion. State whatever you may, for me, cinema has always been that third-row seat at 'Jagan Talkies'. Beside a soundly snoring grandma. Sucking slowly at a taffy, subconsciously swinging my legs to keep the mosquitoes away.

Going to the theatre was a fanfare. For mainly two reasons.

One, such an occurrence did not transpire often. A film had to pass a few screening tests to acquire eligibility for the family viewing. No explicit, romantic 'scenes' as my posh grandmother liked to put it, her fingers making stern quotes on thin air. No gore or too much violence. It should be a product of someone from the well-revised 'Trusted Heroes and Directors' list. And most importantly, a show that ended before 8:30 pm, so the womenfolk could make their way home safely (in the secured ambassador with its trusted driver). A solemn request shall then be posted to grandpa who would grunt and painstakingly dial the theatre owner. Thus, the entire third row would be labeled 'Doctor family seats' and was rightfully ours to claim.

Two, the preparations we made on that day. The instant the tickets arrived, each of us would run one way. Grandma hurriedly stumbling to the kitchen, slamming the widest pans onto her stove, cutting open packets of golden groundnut oil. There were strips of potatoes to be fried, cashew nuts to be roasted, fresh fruits to be sliced and silverware to be washed and dried. By evening, these would be neatly placed in the yellow-violet wicker basket brought home as dowry. My mother would rush to the telephone, calling up the aunts, telling them the plan between bites of the latest street gossip. Me, dreaming of playing silly games with the cousins as I stood stead-fast besides grandma ready to do anything that she bid in the hopes of availing samples of the delicacies.

As the Saturday sun turned mellow, it would reflect off the well-washed ambassador waiting faithfully at the door. The house would smell deliciously of turmeric and coconut from the ladies. And yes, of Gokul Sandal from Grandma and Grandpa. With all aunts and cousins in attendance, it was a gilded procession.

Comprehensible as the 7-year old me found the films and its plot points, there was happiness. There was warmth somewhere within. I was content sitting there, kicking a cousin under the seat, our lips slick from cotton candy we bickered over. Cinema was more than just what was on-screen. It brought in people and built families.

I can still taste the cotton candy. And feel the sting where the mosquito bit. My grandma's soft snore seems to drift in from my side. I sigh as I type, glancing now at the Netflix icon that looks quietly from a nearby tab. Jagan Talkies seems miles away. Aeons in fact. A swipe and a click. Netflix looms on screen. A phantom warmth blooms from somewhere within.

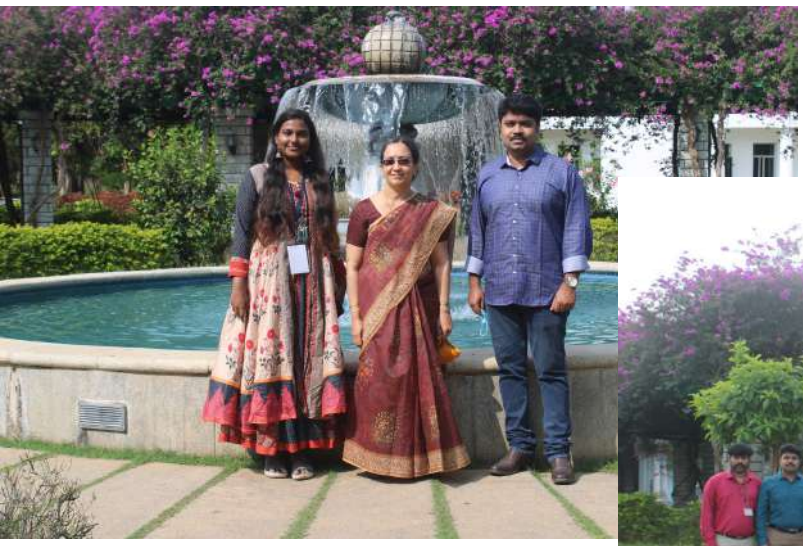
-Harrinei Kumaravel,
CSE A, IV th year

INVENTE 5.0

The Invente 5.0 happened on 22nd and 23rd of this month. With 8 events, 5 sponsors and a motivated Organizing committee, it was held in virtual space successfully. Participants from over the state took part enthusiastically to take home prizes, internship offers and exciting coupons. Dr. Chitra Babu as the head of the department and faculty Coordinators Dr. Sujaudeen and Dr. Raghuraman oversaw the smooth functioning of the first large scale online tech fest our college has ever conducted.

Yocket, a company focussed on kindling abroad dreams of students, was the prime sponsor for the event. The events ranged across technical and non-technical domains to cater to every individual's interest. For the coder geeks, Codolympics and Hackers' Asylum, posed challenges that tested their mettle. While UXI beckoned to the creative minds good at design. Mock Job Drive was a practical event that took the participants on a ride through the placement process leading to the HR round. Paper presentation added a classic touch to the fest. Fun Oasis, the colourful spot for fun non-tech events, presented participants games and fun.

With over 200 participants, the event was well-received. The Organizing Committee headed by the fourth years with an army of juniors worked relentlessly towards it. Suffice to say, their efforts paid off.



WINNING MOMENTS

Madhumita S of **third year** won second place in the easy writing competition conducted as a part of the celebrations by The Institution of Engineers(India), Kalpakkam Local chapter (KLC) to mark the 53rd Engineers day(2020).

Hariharan Sundarraman of **third year** was featured in "***The Hindu newspaper (Chennai)*** " published on 1st January, 2021 for **winning the HCL Carnatic Quest Competition** in the Percussion category for his Mridangam performance. The HCL Carnatic Quest is a national-level competition which comprises three rounds where 3 winners in each category are selected.

Hariharan Sundarraman and (right) K.R. Shrievats

Talent hunt winners to perform at HCL Concerts

HCL Concerts has announced the winners of 'The Carnatic Quest,' the music contest that took place recently. The winners are P. Vikram, Abhishek Ravishankar and Smruthi Bhaskar (Vocal); K.R. Shrievats (Veena); Adarsh Ajaykumar and V.S.P. Gayatri Sivani (violin); Hariprasad Subramanian (flute); Kishore Ramesh, Hariharan Sundarraman and Sumukh Karanth (percussion). Presented by HCL Concerts jointly with Chennai-based Rhapsody Music Foundation, the event is being held to provide a platform for young talented Carnatic musicians across five categories including vocal, veena, violin, flute and percussion. The winners will be mentored by the jury members, who are senior Carnatic musicians, and they will also get a chance to perform at HCL Concerts, both virtual and live. The winners will also get an opportunity to be featured with senior artistes in an exclusive music album. Additionally, the organisation will also conduct training and workshops to enable these artistes leverage the power of social and digital media.

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