MAHARAJA SURAJMAL INSTITUTE OF TECHNOLOGY

Elektro-News

VOLUME 2

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION

Maharaja Surajmal Institute of Technology, established in 2001, is a NAAC 'A' Grade accredited, ISO 9001-2015 certified, NBA accredited Institute, affiliated to GGSIP University, located in JanakPuri, New Delhi. It is ranked in 250-300 band by NIRF.

The Department of Electronics & Communication Engineering, MSIT aims at unceasing commitment towards students, helping them learn, grow, and develop and achieve their goals. The department is performing outstanding with the complete support of management of Surajmal Memorial Education Society and under leadership of our **Director Col(Dr) Ranjit Singh**. The department runs in two shifts- morning and evening. Morning shift is headed by **Prof. Archana Balyan** with a young, experienced and dynamic team of 5 Associate Professors and 18 Assistant Professors, while evening shift is headed by **Dr. Pardeep Sangwan** with a young and promising team of 12 Assistant Professors.

VISION

ECE department strives to become a centre of quality education to meet the global technological needs for the benefit of mankind.

Department of Electronics & Communications Engineering has a fine blend of experienced as well as young and dynamic personalities as faculty, who are involved in providing quality education at Undergraduate (UG) level. The research interests of the faculty members and students encompass a wide gamut of sub-disciplines of Electronics & Communication Engineering.

To give the students clear insight into design and development processes, the department has modern, well-equipped Laboratories with adequate facilities. Some of the important laboratories of the department are eg. Signals & Systems Lab, Analog Electronics Lab, Control Engg. Lab, Microwave Devices lab, Digital Image Processing Lab, Consumer Electronics Lab, Digital Circuits & Systems Lab and Microprocessors lab, VLSI Design Lab and Satellite & Mobile Comm Lab. Faculty is supported by a well-trained technical staff.

MISSION

M1: To impart high quality education in the field of electronics & communication engineering to meet the national and global challenges.

M2: To provide adequate facilities, infrastructure and environment to the students as well as faculty members thereby creating an ambience conducive for teaching-learning process.

M3: To empower the students by enhancing their soft skills and ethics to create social awareness and imbibe national values so as to become good citizen.

M4: Creating a thrust for life-long learning through interaction with outside world on contemporary issues and technological trends.

PROGRAM EDUCATIONAL OBJECTIVEs (PEOs)

PEO1: To produce ECE graduates with strong foundation in engineering and technology for personal and professional growth.

PEO2: To prepare the graduates who will be able to serve/lead various organizations with acquired skills and knowledge.

PEO3: To prepare the graduates who would attain professional competence through life-long learning in higher studies, research work and other professional activities.

PEO4: To prepare the graduates who will practice their profession with ethics, integrity and social responsibility in global context.

Practices followed in Department

Mentoring

A mentor guides a group of twenty students. The objective of mentoring is to improve the academic performance of the students. The mentors interact with students and identify if they have any learning barriers. Mentors work with students individually to help students to work through difficult issues so that they can stay focussed in the classroom and get the maximum benefit.

Guest Lectures

Guest speakers from industry/academics are invited to deliver lectures on emerging technologies. These lectures give students exposure to industry oriented technologies and perspective of the guest speaker's field of work or expertise. One important benefit that is derived from having a guest speaker is the enhancement of the students' educational experiences

Online Resources

Various Digital learning platform like Course
Era at the college provides e-learning
opportunity through online courses in many
fields, So far students have done online
courses like Introduction to
Programming in C, Data Structure and
Algorithms using Python Programming,
Introduction to DBMS
etc.

Awards

Awards for Academic excellence are given to meritorious students, Gold medallists and to Branch Toppers with Prize money for first and second position.

Course Based Projects

The students are driven to implement coursebased projects as an outcome of their laboratory course. This method intends creative imitation leading to research and innovation. Projects are developed for the laboratory courses of every semester and are presented.

STUDENT'S ACHIEVEMENT

Batch	Semester	First Position	Second Position
2017-2021	7 th	Advet	Mishti Gautam
	8 th	Sayoni Ghosh/Ashu Babbar	Rohit Upadhyay
2018-2022	5 th	Shubham Bhardwaj	Akriti Vashisht
	6 th	Ojjaswin Arya	Vyomika Madan
2019-2023	3 rd	Khushboo Saini	Ankit Parashar
	4 th	Karan Kumar	Ishita Gaur

ISHAAN GILL

7TH SEM awarded 2500 US dollars scholarship from Linux foundation.

HARSH ARORA

(5TH SEM) Awarded competency in web Dev workshop by MyCaptain in 2021

Satyam Mishra, Devang Pandey, Rahul Rana

7TH SEM
Awarded with Best paper
award in International
Conference on Industrial
Electronics and Research
Applications (ICIERA), 2021

SHUBH AGGARWAL

Successfully completed Al for students workshop.

EISHAN DESHWAL

3RD SEM Panelist semi-finals 9th best adjudicator in Africa Inter-Varsity debate 2020

ABHIJEET ANAND

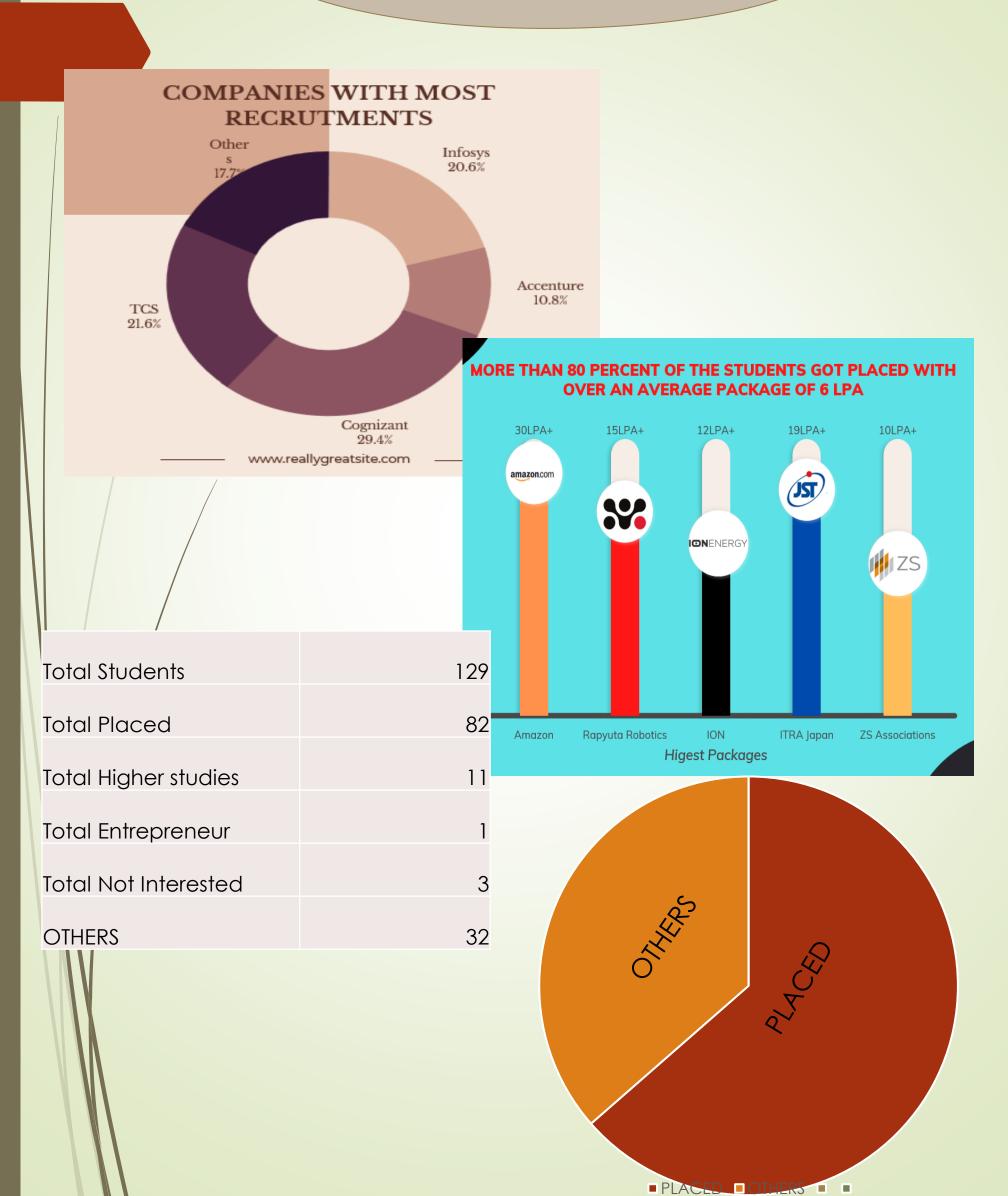
7TH SEM

Invited as a Guest Speaker to deliver a session on " From Business Idea to First Sale" by Entrepreneurship and Incubation Cell, SLIET, Longowal.

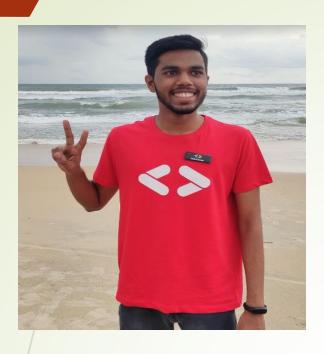
Samiksha

(3rd Sem ECE)
Participated in
PM's Yuva
Mentoring
Scheme in 2021

PLACEMENTS



TOP PLACEMENTS



MUKUL KUMAR

Company: Amazon

Package: 32 LPA CTC with extra

benefits

Profile: Software Engineer

Batch: 2017-21 Branch: ECE-1

Mukul Kumar had full time offers from Amazon, Cognizant, Infosys, TCS and some startups as well. He has completed a 6 month internship at Amazon and had an internship offer from Urban Company. This is one of the highest placements from ECE branch.

ABHISHEK PARASHAR

19 LPA

International Technology research agency Japan

SANYAM DOGRA

15 LPA

Rapyuta Robotics Pvt. Ltd.

Faculty Achievements

Publications:

Metrology"- AdMet-(2021).

	Pooja Singh, Vinay T. R., Archana Balyan , Gangadhara, Sandeep Prabhu M., "P-V and I-V Characteristics of Solar Cell" <i>Design Engineering</i> , 520 – 528, 2021
	Dankan Gowda V., Mohammad Taj, Pramod M. S., Archana Balyan, Thangadurai N. (2021). "Adaptive Algorithm for High-Speed Integrated Filters". <i>Design Engineering</i> , 1388 – 1395, 2021
	Parul Chaudhary and Puneet Azad, "Energy harvesting from human biomechanical energy for health monitoring devices," IETE Journal of Research (Taylor & Francis), vol.67, pp. 74-81, 2021
	Sudesh Pahal, Neeru Rathee & Brahmjit Singh (2021) "A Deep Learning-Based Model for Link Quality Estimation in Vehicular Networks, IETE Journal of Research"
6	Yadav Deepshikha, Gupta Richa, "Double-layer secured automatic home access system with gas detector sensor using Raspberry Pi and Python", Proceedings of 7th National conference on Advances in Metrology- AdMet-2021, 5th -6th March 2021
	M.Gautam, Shaifali M. Arora. "Smart Monitoring and Fault Detection of Sewer System". Proceedings of 7th National conference on Advances in Metrology- AdMet-2021.
D	Kadian Poonam, Arora Shaifali M. , N. Robust "Digital Watermarking Techniques for Copyright Protection of Digital Data: A Survey". Wireless Pers Commun 118, 3225–3249 (2021).
	Gupta Richa, Yadav Deepshikha, Rao Meena, "Design, testing and validation of flyback converter SMPS using IEC 61000-4-11 standard", Proceedings of 7th National conference on Advances in Metrology- AdMet-2021, 5th -6th March 2021
	Gupta, Richa , Gaurav Varshney, and R. S. Yaduvanshi. "Tunable terahertz circularly polarized dielectric resonator antenna." Optik 239 (2021): 166800.
	Pahal, S., Rathee, N. "Evaluating Uncertainty of Measurement While Predicting Location in Smart Vehicles". MAPAN 36, 377–388 (2021).
	N. Rathee, S. Pahal, D. Sheoran, "Evaluating the Uncertainty of Classification Due to Image Resizing Techniques for Satellite Image Classification", MAPAN., pp.1-9,2021 May.(SCI Indexed)
	Deshwal, D., Sangwan, P. and Dahiya, N., 2021. "How will COVID-19 impact renewable energy in India? Exploring challenges, lessons and emerging opportunities". Energy Research & Social Science, 77, p.102097.
	Aman Dahiya. "A Novel Multi-band high gain slotted fractal antenna using various Substrates for X-band and Ku-band applications. Proceedings of 7th National conference on Advances in

Substrate Integrated Waveguide (SIW) for S Band and C Band Applications". MAPAN (2021).
Gupta Richa , Ankit Gaur, Sandeep Gupta, and Garima Bakshi. "Circularly Polarized Multiple Layer Dielectric Resonator Antennas." Progress In Electromagnetics Research C 112 (2021)
Gupta, R., Yadav, D., Rao, M. et al. "Design and Testing of SMPS in Accordance with IEC 61000-4-11 Standard with Measurement Uncertainty". MAPAN (2021).
Rajput, S., Bhatia, K.S. "Self organizing distributed mobility management for next generation mobility protocol. J Ambient Intell Human Comput" (2021).
Rajput, S., Bhatia, K.S. "Self organizing distributed mobility management for next generation mobility protocol". J Ambient Intell Human Comput (2021).
Aman Dahiya. "Design and uncertainty evaluation of a low loss substrate integrated Waveguide usind Duroid 5880 material for S and C band applications". Proceedings of 7th National conference on Advances in Metrology- AdMet-(2021).
Sangwan, Pardeep, Deepti Deshwal, and Naveen Dahiya. "Performance of a language identification system using hybrid features and ANN learning algorithms." Applied Acoustics 175 (2021): 107815.
Sharma, Geetanjali , Abhishek Parashar, and Amit M. Joshi. "DepHNN: A novel hybrid neural network for electroencephalogram (EEG)-based screening of depression." Biomedical Signal Processing and Control 66 (2021): 102393.
Singh, S., Singh, A., & Parashar, S. (2021, June). Design of Digital Differentiator Using Teacher Learner Based Optimization Algorithm. In 2021 International Conference on Communication, Control and Information Sciences (ICCISc) (Vol. 1, pp. 1-6). IEEE.
Singh, S. , Singh, G., Bose, S., & Shiva, "FIR Filter Design Using Grasshopper Optimization Algorithm", Proceedings of 7th National conference on Advances in Metrology- AdMet-2021, 5th -6th March 2021.
U Singh, M Rizwan, M Alaraj, "A Machine Learning-Based Gradient Boosting Regression Approach for Wind Power Production Forecasting: A Step towards Smart Grid Environments", Alsaidan-Energies (2021)
N Sehrawat, BK Kanaujia, A Agarwal, G Varshney, "Analysis of an Inhomogeneous Circularly Polarized Hollow Dielectric Resonator Antenna Using Perturbation Theory", Electronics (2021)
Choudhary R, "Optimization of controller parameters in multi-area power systems using ALO algorithm", Proceedings of 5th National conference on Recent Trends in Electronics & Electrical Engineering, 2021
Ravi Choudhary, J.N.Rai and Yogendra Arya, "Impact of energy storage device on the performance of AGC using ALO tuned PID controller", International Conference on Artificial Intelligence and Speech Technology, 2021

Dahiya, Aman, Anand, Rohit, Sindhwani, Nidhi et al. "Design and Construction of a Low Loss

Participation of Faculty in Faculty Development Programmes

2	Dr. Archana Balyan, HOD ,ECE attended- AICTE-ISTE sponsored one week FDP on "Use of ICT in Engineering Education"; One Week FDP on "Recent Trends in Artificial Intelligence and its Applications" organised by ECE Dept., MSIT.
	Dr. Puneet Azad attended a One Week FDP on "Recent Trends in Artificial Intelligence and its Applications" organised by ECE Dept., MSIT.
	Dr. Sudesh Pahal attended- one week FDP on "Innovation Ambassador advanced training" organized by MHRD innovation cell; one week FDP on "Mentorship program" organized by NITTTR; two week Industrial Training Program on "Data Science" organized by MSIT; One Week FDP on "Recent Trends in Artificial Intelligence and its Applications" organised by ECE Dept., MSIT; One Week FDP on "Intellectual Property management at early stage of Innovations & startups" organized by AICTE-DCRUST.
	Dr. Meena Rao attended- one week FDP on "Recent Trends in Artificial Intelligence and its Applications" organised by ECE Dept., MSIT; one week ATAL AICTE sponsored FDP on "Internet of Things - A Practical Approach" organised by IT Dept., MSIT.
1	Dr. Shaifali M. Arora attended- one week FDP on "Recent Trends in Artificial Intelligence and its Applications" organised by ECE Dept., MSIT; one week ATAL AICTE sponsored FDP on "Internet of Things - A Practical Approach"; one week ATAL AICTE sponsored FDP on "Artificial Intelligence and Machine Learning"; ; one week FDP on "Mentorship program" organized by NITTTR.
	Dr. Neeru Rathee attended- one week FDP on "Innovation Ambassador advanced training" organized by MHRD innovation cell; one week FDP on "Mentorship program" organized by NITTTR; two week Industrial Training Program on "Data Science" organized by MSIT; One Week FDP on "Recent Trends in Artificial Intelligence and its Applications" organised by ECE Dept., MSIT; One Week FDP on "Intellectual Property management at early stage of Innovations & startups" organized by AICTE-DCRUST.
	Mr. Deepak Goyal attended-One Week FDP on "Recent Trends in Artificial Intelligence and its Applications" organised by ECE Dept., MSIT.

Dr Richa Gupta attended- one week FDP on "Recent Trends in Artificial Intelligence and its

Applications" organised by ECE Dept., MSIT; one week ATAL AICTE sponsored FDP on

"Internet of Things - A Practical Approach"; one week FDP on "Simulation Software for

Electrical Engineers" organized by Swami Keshvanand Institute of Technology.

Dr. Deepti Deshwal attended- one week FDP on "Use of ICT in Engineering Education", AICTE-ISTE, MSIT, New Delhi; one week FDP on "Emergence of Reversible and Quantum Logic Circuits" organized by ABES Institute of Technology; one week FDP on "Recent Trends in Artificial Intelligence and its Applications", organised by ECE Dept., MSIT.
Dr Dinesh Sheoran attended- one week FDP on "Use of ICT in Engijnering Education", AICTE-ISTE, MSIT, New Delhi; one week FDP on "Emergence of Reversible and Quantum Logic Circuits" organized by ABES Institute of Technology; one week FDP on "Recent Trends in Artificial Intelligence and its Applications", organised by ECE Dept., MSIT.
Ms. Deepshikha Yadav attended- one week FDP on "Recent Trends in Artificial Intelligence and its Applications" organised by ECE Dept., MSIT; one week ATAL AICTE sponsored FDP on "Internet of Things - A Practical Approach"; AICTE-ISTE sponsored one week FDP on "Use of ICT in Engineering Education"; attended one week FDP on "Simulation Software for Electrical Engineers" organized by Swami Keshvanand Institute of Technology.
Dr. Poonam Dahiya attended one week FDP on "Recent Trends in Artificial Intelligence and its Applications" organised by ECE Dept., MSIT; one week ATAL AICTE sponsored FDP on "Internet of Things - A Practical Approach"; AICTE-ISTE sponsored one week FDP on "Use of ICT in Engineering Education; one week FDP on "Application of Artificial Intelligence in Research and development" organized by CSIR; one week FDP on "Data Analysis & Machine Learning using Python" organized by ATAL FDP by SIT, Rajiv Gandhi Proudyogiki Vishwavidalaya.
Dr. Anshul Pareek attended one week FDP on "Recent Trends in Artificial Intelligence and its Applications" organised by ECE Dept., MSIT; one week ATAL AICTE sponsored FDP on "Internet of Things - A Practical Approach"; AICTE-ISTE sponsored one week FDP on "Use of ICT in Engineering Education; attended one week ATAL AICTE sponsored FDP on "AI in biomedical engineering"
Aman Dahiya attended one week FDP on "Recent Trends in Artificial Intelligence and its Applications" organised by ECE Dept., MSIT; one week ATAL AICTE sponsored FDP on "Internet of Things - A Practical Approach"; one week FDP on "Emergence of Reversible and Quantum Logic Circuits" organized by ABES Institute of Technology.
Ms. Neelam Nehra attended one week FDP on "Recent Trends in Artificial Intelligence and its Applications" organised by ECE Dept., MSIT; one week ATAL AICTE sponsored FDP on "Internet of Things - A Practical Approach"; one week FDP on "Emergence of Reversible and Quantum Logic Circuits" organized by ABES Institute of Technology; attended AICTE sponsored FDP on "Inculcating Universal Human Values in techincal Eduction".
Ms. Geetanjali Sharma attended one week FDP on "Recent Trends in Artificial Intelligence and its Applications" organised by ECE Dept., MSIT; one week ATAL AICTE sponsored FDP on "Internet of Things - A Practical Approach"; one week FDP on "Emergence of Reversible and Quantum Logic Circuits" organized by ABES Institute of Technology.
Dr. Sakshi Rajput attended one week FDP on "Recent Trends in Artificial Intelligence and its Applications" organised by ECE Dept., MSIT; one week ATAL AICTE sponsored FDP on "Internet of Things - A Practical Approach".

	Mr. Parveen Kumar attended one week FDP on "Recent Trends in Artificial Intelligence and its Applications" organised by ECE Dept., MSIT; one week ATAL AICTE sponsored FDP on "Internet of Things - A Practical Approach"; one week FDP on "Emergence of Reversible and Quantum Logic Circuits" organized by ABES Institute of Technology;.
	Ms. Nishtha Saroha attended one week FDP on "Recent Trends in Artificial Intelligence and its Applications" organised by ECE Dept., MSIT; one week ATAL AICTE sponsored FDP on "Internet of Things - A Practical Approach"; one week FDP on "Emergence of Reversible and Quantum Logic Circuits" organized by ABES Institute of Technology; one week FDP on "Advanced Communication and Antennas" organized by Indian Institute of Technology, Guwahati.
	Ms. Vishaka Tomar attended one week FDP on "Recent Trends in Artificial Intelligence and its Applications" organised by ECE Dept., MSIT; one week ATAL AICTE sponsored FDP on "Internet of Things - A Practical Approach"; one week FDP on "Emergence of Reversible and Quantum Logic Circuits" organized by ABES Institute of Technology; attended one week FDP on "Recent Trends in Optoelectronics & Optical Communications".
	Ms. Parul attended one week FDP on "Recent Trends in Artificial Intelligence and its Applications" organised by ECE Dept., MSIT; one week ATAL AICTE sponsored FDP on "Internet of Things - A Practical Approach"
	Ms Himani attended one week FDP on "Recent Trends in Artificial Intelligence and its Applications" organised by ECE Dept., MSIT; one week ATAL AICTE sponsored FDP on "Internet of Things - A Practical Approach" one week ATAL-AICTE sponsored FDP on "Artificial Intelligence in Biomedical Engineering: Current Trends and Future"; one week FDP on "Key Enabling Technologies for 5G Communications and Beyond" organized by Jaypee Institute of Information Technology, Noida.
	Dr. Pardeep Sangwan attended two weeks FDP on "ICT Tools for Teaching, Learning Process and Institutes" organized by MeitY, Govt. of India.
	Mr. Ravi Choudhary attended a one week FDP on "Research Trends in VLSI design" organized online by NITTTR, Chandigarh.
<u> </u>	Mr. Sandeep Singh attended a one week FDP on "Machine Learning With Python" organized by Brain Mentors Pvt. Ltd. Held at MSIT.
	Mr. B. K. Hemant attended a one week FDP on "Analog IC Design: Specifications to Chip" organized at NIT Uttrakhand.
	Ms. Jasmine Chhikara Attended a one week FDP on "Machine Learning With Python" organized by Brain Mentors Pvt. Ltd. Held at MSIT. Attended 5 days FDP on "Deep Learning for Medical Data Analysis, Visualization and Predictions" organized online by EduxLabs (Esoir Solution).

Patents Published by Faculty

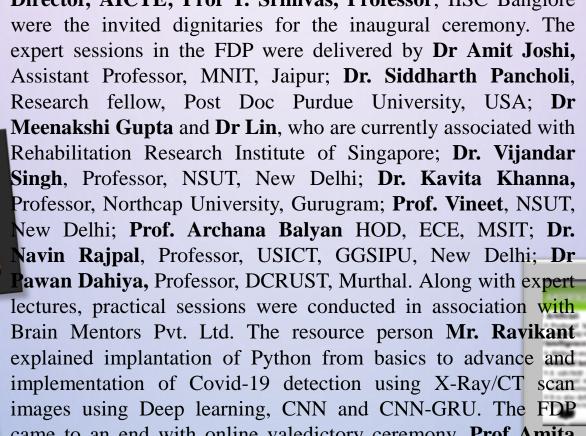
- •Dr. Archna Balyan, Harshita Chadha, Dr. Suman Mann, Dr. Nitish Pathak, Dr. Satish Vaishnav, Ms. Vinita Rohilla, Ms. Neelam Sharma, Dr. Shrikant Sonekar, granted a patent on "Unclog: A Drone-based Traffic Congestion Mitigation System" with application no. 2021106405
- •Dr Shaifali M. Arora, Dr N. Kumareshan, Dr K. Punitha, Ms. Poonam Kadian, Ms. Anshul Pareek, Dr. C. Ramakrishnan, Dr. R.Karthick, Dr. R. Balamurugan, Dr. Hitesh Panchal, Dr. Suman Mann, Dr K Mahendran, Mr Ragupathy Shanmuga Sundara published a patent on "A Smart Healthcare Monitoring Systm using IOT" with application no. 202141030807
- •Ms. Deepti Deshwal, Dr. Naveen Dahiya, Dr. Pardeep Sangwan, Dr. K.P.Chaudhary have been granted a patent on "An Automatic Sanitizing Device" with application no. 202011049882 / 369023 on 10/6/2021
- •Dr. Aman Dahiya, Dr. Nidhi Sindhwani, Ms. Deepti Deshwal, A.P.S. Sengar, Dr. Pardeep Sangwan, Dr. Naveen Dahiya, Dr. Garima Bakshi published a patent on "Design and development of Microstrip patch antenna for optimized radiation" with application no. 202011051563
- •Dr. Shermin, Dr. Bhubaneswari , Dr. Rajesh Aggarwal, Dr. SR Mary Fabiola, Dr. Saahira Banu, **Dr. Aman Dahiya**, Dr. Chandra Kumar, Dr. Sumanta Bhattacharya, Mr. Nanda Kumar, Mahesh Kumar, published a patent on "IOT based smart wearable suit for self health assessment in post COVID era" with application no. 202141030202
- •Dr. Robin Singh Bhadoria, Dr. Tripti Sharma, Mr. Akshat Goyal, Dr. Rinky Dwivedi, Dr. Koyel Datta Gupta, Dr. Rekha Tripathi, **Dr. Archana Balyan, Dr. Meena Rao,** published a patent on "Method for Authenticating and Validating Quick Response Code" with application no. 202121010704 A
- •Ms. Shyla, Prof. (Dr) Vishal Bhatnagar, Prof. (Dr) Vikram Bali, Dr. Shivani Bali, Mr. Navdeep Bohra, Ms. Neeti Sangwan, Dr. Kakoli Banerjee, Dr. Deepti Aggarwal, Ms. Sonali Mathur, Mr. Ajay Kumar, Ms. Ashish Kumari, Dr. Harmunish Taneja, Dr. Kavita Taneja, Dr. Sapna Sinha, **Dr. Dinesh Sheoran** has been granted a patent on "Reduce, Re-Cycle And Reuse (Rrr) Iot Intelligence Waste Management System" with application no. 202111001043 / 375180.
- •Dr. Suman Mann, Dr. Archana Balyan, Ms. Deepshikha Yadav, Ms. Meena, Mr. Sparsh, Mr. Shivam, Mr. R.L Latha, Mr. M.Suresh, Mr. Dhanapal, Mr. N. Rajasekaran published a patent on Wi-Fi based home automation system using Google assistance with application no. 202111007809
- •Mr. Harivans Pratap singh, Mr. Gaurav Dubey, Dr. Anil Kumar Dubey, Dr. Kavita Sheoran, Dr. Prabhjot Kaur Sidhu, Dr. Geetika Dhand, Dr. Anupama Kaushik, **Ms. Geetajali Sharma** published a patent on "Method and Electronic Device for Monitoring User in Work Site" with application no. 202111011965
- •Asisa Kumar Panigrahy, Sivakumar R. D, Matta Durga Prakash, Shafali Jain, Y.Dastagiri Reddy, **Dr. Aman Dahiya**, Gobinath Manavalan, Manish Kumar, K.Bhaskar Reddy, R. Karthikeyan published a patent on "Artificial intelligence based smart detection of Lung disease from chest X-Ray" with application no. 2020104155
- •Dr. Naresh Kumar, Dr Adeel Hashmi, **Dr. Neeru Rathee, Dr. Sudesh Pahal**, Dr. Prabhjot Kaur Sidhu, Dr. Jyoti Yada published a patent on "Point to Point Regression Analysis-Based Big Data Processing Using Machine Learning" with application no. 202111017897
- •Pradeep Laxkar, Tulika Chakrabarti, Ananda Shankar Hati, Suraya Mubeen, Kuntal Barua, R. Senthil, K. Mohana Lakshmi, Ashwini N., Guruprasad S., Meena Rao, Prasun Chakrabarti, G. Naga Rama Dev, published a patent on "GPS data spoofing and malfunctioning detection system using classifiers" with application no 2021100964
- •Dr Garima Goswami, Dr. pankaj kumar Goswami, Dr. Vikas singh, Dr. Arti vaish, **Dr. Richa Gupta**, published a patent on "A RNN based spatio temporal data mining model for urban road planning" with application no 2020104112
- •Dr.Sudeshna Chakraborty,Dr. Pradeep,Sandeep Gulia,Dr. Latha Banda, Dr. B.Sunil Srinivas, Dr. Subrata Sahana, Sandeep Singh, Swati Malik, Ritu Maity, Prof.Ramesh Chandra Panda, Dr P Karthigeyan published a patent on "Aluminium Louver" with application no 345382-001

One Week Online Faculty Development Program

Recent Trends in Artificial Intelligence and Its **Applications**

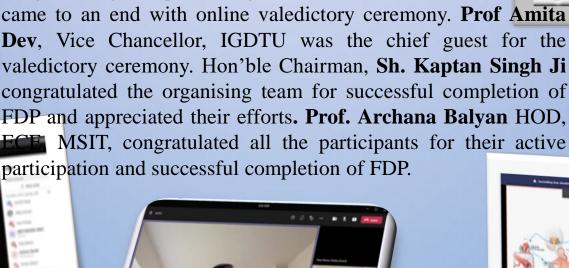


Dr Shaifali M. Arora, Associate Professor, Department of ECE. organized a one week FDP with **Dr Dinesh**, **Dr Poonam**, **Ms** Geetanjali, (Co-conveners) on Recent Trends in Artificial Intelligence and Its Applications from 29th November to 3th December 2021. More than 100 participants from various Engineering colleges attended the FDP. The main objective of this FDP was to give exposure to participants from basics to recent trends and updates in the field of Artificial Intelligence and its significance in real world applications. Col. B. Venkat, Director, AICTE; Prof T. Srinivas, Professor, IISC Banglore



ECE MSIT, congratulated all the participants for their active













Books/ Book Chapters:

- •Archana Balyan, An Overview on Resources for Development of Hindi Speech Synthesis System (book chapter), New Ideas Concerning Science and Technology Vol. 11, 16 April 2021(book)
- •Poonam and Shaifali M. Arora. ARPS: An efficient fast block matching algorithm for motion estimation. Lambert Academic Publication. ISBN: 978-620-3-46496-2
- •Poonam. Digital image watermarking using MATLAB. Lambert Academic Publication. ISBN: 978-620-3-46540-2
- •Anshul Pareek. V-Blast MAP-ZF/LLSE Linear receiver. Lambert Academic Publication. 978-620-3-47187-8

Faculty Special Conrtibutions

- •Dr Sudesh Pahal, Convener Institution Innovation Council, MSIT, (Associate Professor, Dept. of ECE, MSIT) organized an online session on the topic of Ideation and Entrepreneurship & Innovation as a career opportunity on 22.12.2021 and 23.12.21 through online mode to discuss with students about how to develop business models & ideas for startups, evaluating these ideas & also learning about our Intellectual Property Rights (IPRs).
- •Dr Sudesh Pahal organized Ideathon: Stage 1 in January 2021 and Ideathon: Stage 2 in July 2021
 •MSIT got certificate of appreciation for conducting session on IPR under NIPAM program. This session has been organized by Dr Sudesh Pahal.
- •Dr. Meena Rao, Associate Professor, Dept. of ECE, MSIT organized an AICTE-ISTE Refresher/Induction programme on the topic "Use of ICT in Engineering Education". The programme aimed at the improvement of faculty members by making them aware about various Information & Communication technology tools that can be used for teaching learning process. AICTE-ISTE had granted a maximum amount of Rs. 93,000/- (Rs. Ninety three thousand) to be spent per slot for conducting the programme in Online mode.
- •Aman Dahiya, Assistant Professor, Dept. of ECE, organized 7th National conference on Metrology AdMet-2021 on March 5th-6th, 2021 successfully in association with CSIR-National Physical Laboratory (CSIR-NPL), Metrology Society of India (MSI) and National Accreditation Board for Testing & Calibration Laboratories (NABL) India in the capacity of the Co-convener.
- •Aman Dahiya, hosted a special issue on "Advances in Sensors and Measurements for Metrological Applications" in capacity of guest editor of MAPAN (SCIE Indexed), July 2021.
- •Aman Dahiya, edited springer book series on "Lecture Notes in Electrical Engineering" in capacity of editors for AdMet-2021 proceedings (SCOPUS Indexed), 2021.
- •Aman Dahiya, Chair special session in an International symposium on 11th -12th Nov. 2021 organized by Sikkim Manipal University.

Events organised by the deparment

Webinar on "How to do well in Aptitude Test

Participants: ECE students of 2nd, 3rd and 4th year

Dated: 13th October, 2021 Coordinator: Dr Poonam

Resource person: Mr. Anil Bhaduria, Sr. Regional Head in

T.I.M.E. Education



The objective of this webinar was:

- •To guide students for cracking aptitude tests.
- •The session revolved around the various aspects of aptitude tests. The speaker showcased and discussed various aptitude questions

Webinar on "System on Chips Design and Verification" by Maven SiliconPvt. Ltd

Participants: ECE students of 2nd,3rd and 4thyear Dated: 17thApril, 2021(10:30 am to 1:30 pm)

Coordinator: Dr Sudesh Pahal

Resource person: Mr. PR Sivakumar, Founder and CEO of Maven SiliconPvt.

Ltd.



The session was on SoC Design and Verification where the students learned about:

- VLSI Industry
- SoC Design, ASIC Vs FPGA
- Introduction to Verification
- Functional Verification Process
- Testbench and Testcases
- Reusable Testbench
- Directed Vs Random
- Coverage Driven Verification
- . UVM Testbench

Webinar on "Opportunities After B. Tech

Participants: ECE students of 3rd and 4th year

Dated: 11th September, 2021

Resource person: Prof. Baseet Alam, A motivational

speaker and Sr. Faculty at ACE Engineering Academy



The objective of this webinar was:

- •To guide students of the various career options
- Various national level exams
- •Examinations by Government of India. These include GATE, ESE, PMRF and many more.

Webinar on "Foreign Languages" by Padhega Bharat

under Langways

Participants: 44

Dated: 17th March, 2021

Coordinator: Dr Sudesh Pahal

Resource person: Ms. Rupali, Mr. Jitender Sharma BDM

- North, Padhega Bharat

The webinar was focused on:

- •Importance of Learning Foreign Languages
- Career enhancement
- •High Employment Potential
- Escalate existing career and skills.
- Padhega Bharat also provides courses for the SAP,

Microsoft Business Intelligence, Artificial Intelligence, Blockchain.



An expert talk on "DFT using Tessent tool" by CoreEL Technologies



Participants: 44 Dated: 23rd April,2021

Coordinator: Dr Sudesh Pahal

Resource person: Mr. Raghav Pachaury, CoreEL

Technologies

The session was focussed on:

- •EDA Solutions for IC/ASIC Design & Verification
- Basics of Design for Testability
- •Need For DFT and DFT with Tessent tool.

Webinar on "Internet of Things"

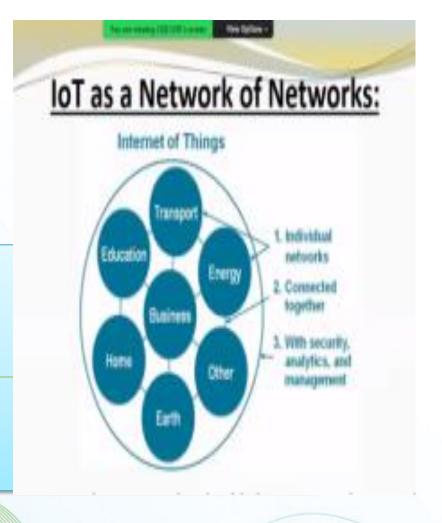
Participants: ECE students of 2nd, 3rdand 4thyear

Dated: 14 September, 2021 Coordinator: Dr Poonam

Resource person: Ms. SourabYadav, CQS

Training Pvt. Ltd

- •The webinar was focused on:
- •Importance of Learning Foreign Languages
- Career enhancement
- •High Employment Potential
- Escalate existing career and skills.
- •Padhega Bharat also provides courses for the SAP, Microsoft Business



IEEE MSIT

IEEE MSIT RAS commenced the session with ML Series on YouTube to introduce the audience to fundamentals required for Machine learning. A webinar with an Industry expert was organized on Roadmap for ECE students. Think Bot Quiz series was organized on the theme of Python and Machine Learning. Webinars on the topic of Data structure and algorithm and Competitive coding and placements were conducted in collaboration with PrepBytes. A virtual Treasure hunt navigating participants through various platforms of IEEE MSIT was conducted on the occasion of IEEE Day. IEEE MSIT RAS concluded the year with an ideation-planning-execution-based hackathon, ROBOTIQUE

PROJEC75

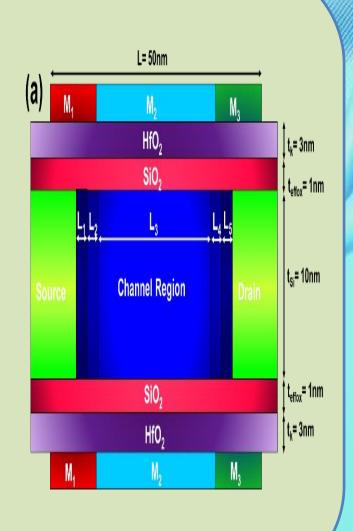
Muskan Jain, Mansi Jain and Mohd Faizan (2021 Batch)made a project on Melanoma classification using deep learning architectures and transfer learning. This project deals with Skin Cancer, which is Abnormal growth of skin cells, especially Melanoma, one of the most serious types of skin cancer, is caused by melanin-producing cells (melanocytes). The proposed model forecasts the likelihood (floating point) that the lesion in the image is malignant between 0.0 and 1.0. (the target) with an accuracy of 98.1%. The number 0 signifies benign and 1 indicates malignant in the training data, train.csv.

Avanish Pratap Singh. Bhawani Shankar, Shreeram Ramesh (2021 Batch) made a project on Hand Movement Classifier .In this project the Electromyography (EMG) signal which is a biomedical signal are studied, they measures electrical currents generated in muscles during its contraction representing neuromuscular activities. The purpose of this project is to classify the human hand gestures using the EMG signals. The data was obtained from the data set provided online by Mr. Rami Khusaba.. The performance of the various models were then compared with each other.

Nanowire Tunnel – FET For Circuit Design Application Samriddhi Raut (2021 Batch)

Nanowire Tunnel Field Effect Transistor (TFET) is proposed to be one of the most advanced 1-D devices beyond CMOS. The device has been first analytically modelled and calibrated to the experimental results to incorporate the accurate device physics in EDA environment. Investigation reveals the better band diagrams at device level with improvement in the transfer characteristics as shown in Figure.

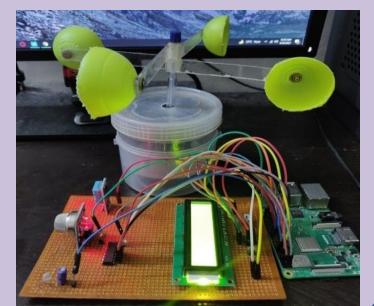
From the application perspective, the introduction of a gate stack with different materials helps in improving the linearity performance of the device



Automated Weather Monitoring Station based on IoT Mishti Gautam, Pankaj Saroha (2021 Batch)

Weather condition plays a very important role in everyday life since agriculture, aerial, marine transport services and many other things depend on

it. The Automated Weather Monitoring Station is a smart, real-time, efficient, low-cost, accurate, Low power, portable, high-speed which will enable enhanced data collection in real time of environmental parameters without intervention of humans. The Weather Monitoring Station will provide an automatic monitoring mechanism on a cloud platform to authorities and display weather conditions on an LCD screen.



Brain Tumor Detection using Artificial Intelligence Muskaan (2021 Batch)

Automated defect detection in medical imaging has become the emergent field in several medical diagnostic applications. Automated detection of tumor in MRI is very crucial as it provides information about abnormal tissues which is necessary for planning treatment. Automated tumor detection methods are developed as it would save radiologist time and obtain a tested accuracy. The goal was to provide fast and early diagnosis based on Brain MRI scans. It proves to be not only efficient but economic too as it will also reduce the cost of highly expensive cancer diagnosis.

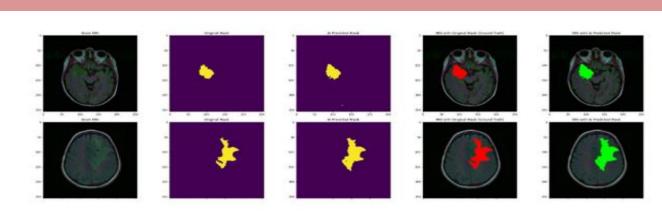


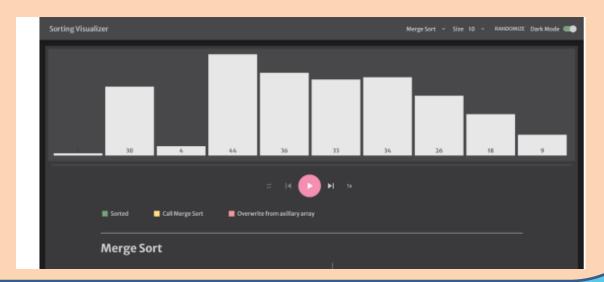
Fig 1: Original Brain MRI scans and tumor location along with AI predicted tumor location

Sorting Visualizer

Neelansh Raghav, Jatin Sethi, Prajjwal Sharma (2022 Batch)

Sorting Visualizer is a web application built using HTML, CSS, JavaScript and React Framework. It is responsive application used to visualize how a sorting algorithm works. It helps the user see the intermediate steps between the input phase and final output phase of an algorithm. This app has the functionality to work on different sorting algorithms i.e., bubble sort, selection sort, insertion sort, quick sort, merge sort etc.

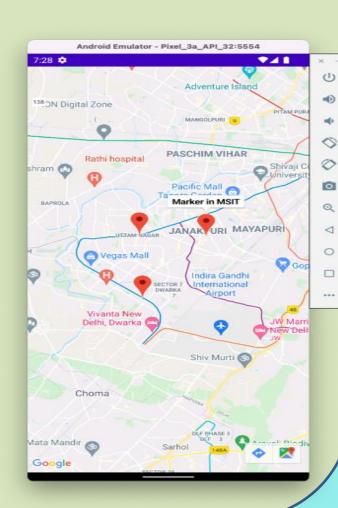
This app supports various animation controls that is pause/play, previous/next and adjustable speed.



GPS Pollution Exposure (GPE App)

Aman Sahay, Muskan, Yashvi (2022 Batch)

Pollution has been a cause of major concern in Delhi. We have basically make a GPS location marker, which can be used to mark the locations that one visits in the day. A health conscious person can analyse the total exposure throughout the day with its respective AQI provided by different sites. Our Android devices are capable of Geolocating us ,and our app makes it feasible to store these locations for further analysis. Our app hopes to provide a tool which can be used to better understand the pollution that our bodies are subject to.



Predicting Standings in F1 Sports Constructors' Championship Winner Prediction Using Lasso Penalised Linear Regression Web-app Deployed Through Node.Js

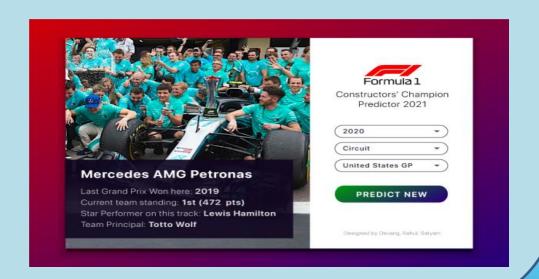
Devang Pandey, Rahul Rana, Satyam Mishra (2022 Batch)

F1 has always consisted of intense battles of newly-developed technologies between teams. Each year, all 10 teams in F1 develop new strategies and cutting-edge technologies to stay ahead of their

competitors. The strategies that they develop are a product of thousands of simulations consisting of millions of

variables including weather, temperature, pressure, drivers, machinery, etc. that affect the

chances of winning.
The aim of this research is to
understand such variables & data
and propose a model to predict
the winning team, as close as
possible to genuine results



Hardware Design & Implementation of Fpga Based UART Protocol Using Input Device and Hyperterminal

Kushal Rajvanshi, Shikhar Tiwari(2022 Batch)

This article is about the projectHardware Design and implementation of FPGA based UART protocol

using input device and HyperTerminal. The entire project simulations were performed over Xilinx VIVADO HLX edition 2020.2 application. This project gives the detailed study about the designing and hardware implementation of UART protocol and its working through FPGA, by using input device as keyboard to display text on the screen and UART protocol circuit for data transfer

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