

# MAHARAJA SURAJMAL INSTITUTE OF TECHNOLOGY



## REFLECTIONS



### International Conference on “Artificial Intelligence and Applications (ICAIA 2020)”

Maharaja Surajmal Institute of Technology was immensely pleased to organise its First International Conference on “Artificial Intelligence and Applications” (ICAIA 2020) on February 6-7, 2020. The conference was intended to provide an international forum for original research findings, as well as exchange and dissemination of innovative, practical development experiences in different fields of Artificial Intelligence. One of the major goal of the conference was to bring academic scientists, engineers, and industry researchers together, to exchange and share their experiences and research results about most aspects of science and social research, and discuss the practical challenges encountered and the solutions adopted. (cont.)

### IN THE SPOTLIGHT

International Conference on “Artificial Intelligence & Applications ”

Avensis 2020

Genesis 2020

Enva 2020

Annual Day 2020

Sports Day 2020

DEPARTMENTS:

- Computer Science & Engineering
- Information Technology
- Electronics and Communication Engineering
- Electrical and Electronics Engineering
- Applied Sciences

College Societies

### PREFACE

MSIT is the crystallisation of the efforts, dreams and aspirations of all the people involved in this mission. We aim to give the best to the students desiring quality education to become successful and seize the best of opportunities available in the world towards a successful professional life ahead. We provide all the requisite facilities for value added programmes such as personality development improving communication skills so as to enhance the employment opportunities of our graduates. Our core values of knowledge, character, excellence, integrity, transparency, teamwork, & student-centric learning are all integrated into our academic programs.

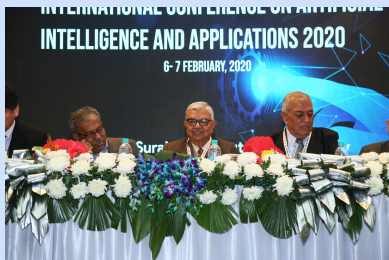
The outbreak of corona virus pandemic has created unprecedented challenges in the field of education by impacting the system but not the willingness to learn and teach. The efforts by the government across the world to ensure sustainability of learning in this moment of crisis is revamping the whole education system. Digitised education and easy access to the internet is transforming the approach to learning with virtual classrooms, advanced learning tools and free educational content. We at MSIT, truly believe that digital technology holds great promise to provide access to high quality learning, which may change the landscape of education forever. **STAY HEALTHY, STAY SAFE!**

Dr. K.P. Chaudhary

Director,MSIT

### MSIT in the limelight

MSIT has performed exceedingly well during the session 2019-2020. This is reflected in the all India survey of more than ten thousand technical institutes of the country recently conducted by India today. MSIT has been rated as the best engineering college of Delhi State. It ranked 3<sup>rd</sup> at Northern India level and 18<sup>th</sup> at All India level, for the best engineering college. It also ranked 4<sup>th</sup> among Private Engineering colleges with best value for money .



We were fortunate to have received over 160 research papers from all over the world, wherein we shortlisted 63 papers for our conference after rigorous double-blind peer review process. The shortlisted papers were presented in 8 parallel sessions on both the days.

We were honoured to have Prof. K.K. Aggarwal as our Chief Guest and Mr. Karnal Singh, as the Guest of Honour, for the inauguration session on 6th February, 2020. Prof S. K. Garg, General Chair of the Conference, addressed the audience about the real life application of AI in the medical field, car-automation etc. He motivated the students to develop Product based on AI for the benefit of the society.

Keynote speaker Prof. Sankar. K. Pal, INSA Distinguished Professor and former Director ISI Kolkata, discussed about Granular Data mining in Video Analytics. Our next invited speaker Prof. Vassil, Head Cyber Security Research Centre London Metropolitan University, UK, spoke about AI on demand through hybridisation and containerisation. Dr. Gaurav Gupta, Department Chair, Department of Mathematical Sciences, WENZHOU-KEAN University, China, threw light on Exploratory Data Analytics using R software to get a better understanding of the data and glean insight from it. Prof. Navin Rajpal, from USICT, GGSIPU, enlightened us about AI and Robotics an upcoming branch of Engineering. Prof. Arvinder Kaur, from GGSIPU, threw light on Empirical Research concepts and Applications.

After the grand success on the inaugural day of International Conference on Artificial Intelligence (ICAIA2020) organised by Maharaja Surajmal Institute of Technology, the second day started with great energy and enthusiasm . The first session commenced with Dr. Bhuvanesh Bhuvan Unhelkar, PhD, FACS, Associate Professor, and University of South Florida Sarasota-Manatee, Florida, USA talking about computing in business applications using machine learning. Following this enlightening talk, Prof. Smriti Srivastava, Professor, Instrumentation and Control Engineering, Netaji Subhas University of Technology, New Delhi, India presented a talk on Meta-heuristic optimisation algorithms. She stressed on the same as it is becoming more and more popular in engineering applications. Lastly, Dr. Toshiyuki Takatsuji, Director, Research Institute for Engineering Measurement, National Metrology Institute of Japan, Advanced Industrial Science and Technology, Japan delivered a talk on Information Technology, IoT, AI, and so on. Later in the day Dr. V.P. Vishwakarma (GGSIPU)discussed on Artificial Intelligence and its applications in Pattern Recognition followed by Dr. Manik Sharma(Editor-in-Chief, EAI Endorsed transactions on scalable Information systems Journal) who discussed on Need and design of Smart and Intelligent stress Diagnostic System using Machine Learning and Nature inspired and content aware Computing Techniques.

The valedictory session was graced my sincere appreciation for Dr. D K Aswal (Director, CSIR- National Physical Laboratory), Mr. N. Bajaj(Managing Director, Mitutoyo South Asia Pvt. Ltd.), Prof Amita Dev (Pro-Vice Chancellor, Indira Gandhi Delhi Technical University).



## AVENSIS 2020

MSIT successfully organised its annual technical fest- Avensis 2020 on January 8<sup>th</sup> and 9<sup>th</sup>. The event was a remarkable success and witnessed a footfall of more than 1500 students from various reputed colleges. This 2 day extravaganza presented a plethora of exhilarating events which were challenging yet extremely intriguing. This success is wholly attributed to the hard work and dedication of the student volunteers who worked restlessly day in and day out under the guidance and supervision of Dr Shaifali M. Arora (Convener), Dr Geetika Dhand (Co-Convener) and Ms Poonam (Co-Convener).

AVENSIS presented a wide range of enrapturing events; it was a perfect blend of Technical as well as Non-Technical events. There were a total of 32 events held under Avensis 2020. The annual fest was conducted under four departments- Robotics, Fun and Creativity, Technical and Literary and Quizzes. Various events were - Robo Wars, Line Following Robot, Robot Rugby, Carnage, Robo Maze and Roboworld, Pop it like it's hot, Face the mask, Tape a tale, OK-Memer, B.T-The biz tech quiz, Sike the psych, Code Shuffle, PUBG, CS Go, COD, FIFA, NFS, Mortal Kombat, Hackathon, Hack the web, Brocode, Blind code and Codify, Veteran Showdown, Bollywood Unplugged, Dawat-E-Khel, Gully Cricket, Trove-The Treasure Hunt, Mind the mines, Rope Burn and Footvolley.

## GENESIS 2020

Genesis 2020 is the Annual Cultural Fest of Maharaja Surajmal Group of Institutions. It was organised on 6<sup>th</sup> and 7<sup>th</sup> January 2020. Genesis embodies the idea of holistic development of students and ensures that every student gets a platform to showcase their talent. It also provides a platform for students from every year to enhance their leadership skills by organising events. Genesis 2020 was a two day event with plethora of events ranging from literary to creativity to cultural to gaming.

The inaugural ceremony also had various cultural performances by students from different departments and a soulful Saraswati Vandana for seeking Goddess Saraswati's blessings. The main events of fest were Battle of Bands, Battle Underground was an online PUBG, Ad Act, Newspaper Dress making competition, Creative writing, Cooking without fire, Dramathon, Stand-up, Minute to Fame, Street Dance, Panna Knockout, Innovision, Saptak, Cadenza, Navras, Mr. and Ms Genesis, etc. Genesis 2020 in short was an extravagant with various opportunities for students to showcase their talent. Dr. Anju Dhillon (MSIT) and Dr. Sumita Kukreja (MSI) were the convenors for the same.

## ENVA 2020

Prakriti - the Humanitarian and Environmental Society of MSIT organised its annual fest ENVA, the grandest and the most awaited college fest. The two-day extravaganza held on 8<sup>th</sup> and 9<sup>th</sup> January 2020 ensured that everybody enjoyed the varied events hosted in the fest. While it rained heavily on the first day, it did not bog down Team Prakriti and everybody continued to organise their events with more zest and determination. With a vibrant line-up of cultural events and competitions, ENVA'20 was a crowd-pulling event which witnessed a footfall of more than 4000 students. The competitions were both inter college as well as intra college and the participation was extraordinary. Their efforts bore fruit when a huge number of people attended the fest and participated in various events. The grand endeavour was turned into a reality, under the guidance of the staff and our seniors.

The line up of competitions in the fest was as follows - AAGHAZ, the street play event, the Greenite event, Mystery Room, Street Dance competition, Art Galeria, Treasure Hunt, Senatus, the debating event, Guns and Roses, Enva's Got Talent, Episodes, Bazinga, Hunger Games, SportsZilla, FragZone CSGO, Bizzare Bidding, Fragzone PUBG, Roohaniyat, Minute to Win it, etc. The lineup of events was a major success. Moreover, everybody enjoyed the fest. It left them with cherished memories and excited for next year.



## ANNUAL DAY 2020

MSIT celebrated its Annual Day, in collaboration with NSS MSIT and Prakriti MSIT on January 11, 2020. Prof. Prem Vrat, Founder- Director, IIT – Roorkee, Pro-Chancellor; Professor of Eminence and Chief Mentor at The NorthCap University, Gurugram & Professor of Eminence at the Management Development Institute (MDI), Gurugram graced the occasion as the Chief Guest. The Hon'ble Chief Guest Prof. Prem Vrat, Sh. Kaptan Singh (Vice President, SMES), Sh. Ajit Singh Choudhary (Secretary, SMES), Mr. Rajpal Solanki, (Treasurer, SMES), Mrs. Esha Jakhar (Vice President, SMES), Prof. K.P. Choudhary (Director, MSIT), Prof. Rachita Rana (Director, MSI) and Prof. Ashok Oberoi (Director, Placements) inaugurated the function by lighting the lamp. Sh. Kaptan Singh ji, President, SMES extended a warm welcome to the Hon'ble Chief Guest, all the dignitaries, parents, students and all the invitees on the occasion of the Annual day 2019. Prof. K.P. Choudhary, Director, MSIT welcomed the chief guest and the dignitaries and delivered the Annual report. He presented the achievements of the Institute, academic as well as co-curricular.

The Annual Prize Distribution function was a moment of pride and honour for all the winners. The students were awarded with certificates and prize money for their commendable performance in academics and sports activity. On the occasion of annual day, the Institute rewards the best faculty on the basis of their performance and sincerity. The event concluded with vote of thanks delivered by Sh. Ajit Singh Choudhary, Secretary, Surajmal Memorial Education Society.

## SPORTS DAY 2020

Annual Sport Day for 2019-20 session was organised on 25th Jan. 2020 at college sports ground in collaboration with NSS cell of MSIT. The annual sports day welcomed Hon'ble Chief Guest Sh. Surinder Pahal ji, President Kabbadi Association of India, which was followed by flag hosting by Chief Guest, Treasurer SMES Sh. Raj Pal Solanki Ji, Sh. B. D. Dabas Ji member Executive Committee, Sh. Ramesh Chaudhary Ji member Executive Committee, Sh. Ajit Singh Ji member Executive Committee, and Prof. K.P. Chaudhary Director MSIT.

There were a wide variety of activities and games that aimed at the overall exercise of the human body, such as, March Past, 800m sprint (Men and Women), 200m sprint (Men and Women), 400m Sprint (Women), 100m sprint (Men and Women), 4X200m Relay (Men and Women), Tug-of-War (Men and Women), Discus Throw (Men and Women), Shot-put (Men and Women), etc. The students participated enthusiastically. The event turned out to be a huge success and showed an active participation with full zest and enthusiasm. The annual sports meet 2019-20 clearly showed the interest of MSIT students towards sports. At the end of the sports activities, Dr. Vivek Solanki (Assistant Professor, Physical Education) presented vote of thanks. The day concluded with the prize distribution ceremony where the winners of the day were honoured and presented with medals and certificates.

## STUDENTS' ACHIEVEMENTS

- ▶ Mayank Solanki, of ECE department, won gold medal in Delhi Olympic Games and a silver medal in Delhi State Fencing Championship.
- ▶ Anjali Bisht, Khushi, Sejal Dabas and Simran, students of CSE department, have been Selected for North Zone Inter- University, for kabaddi.
- ▶ Mandeep Payal, of CSE department, has been selected for North Zone Inter-University, for badminton.
- ▶ Priyanshu Vats, of ECE department, won gold medal in Power lifting.
- ▶ Ashish Dagar, a student of CSE department, won gold medal in Discus throw.
- ▶ Maryada Sharma, of CSE department, won gold medal in Triple Jump.
- ▶ MSIT Volleyball team grabbed the bronze medal.
- ▶ MSIT Basketball team won the silver medal.



## DEPARTMENTS

## COMPUTER SCIENCE AND ENGINEERING

## MORNING SHIFT

## Seminar on "Importance of Research paper in Higher Education"

Session was conducted by "Jamboree", for the students of 5<sup>th</sup> Semester on 6<sup>th</sup> Sept'19. The General Manager of Jamboree, Sh. Arun, interacted with the students. The main areas of his talk were GMAT, GRE, the gateway test for Masters, MBA studies in the abroad as well as India's top notch Institutes, Profile Building, Masters/MBA Deferred admission program available without work experience, SOP & LOR's related information, Career prospects after Masters.

## Seminar on "Microsoft certification"

A seminar/workshop was organised for the students of CSE 2<sup>nd</sup> year on 22<sup>nd</sup> January, 2020. The talk was given by Mr. Parth Shukla from 9LedgePro. 9LedgePro is a team of skilled knowledge workers whose mission is to assist students in developing skills and help students in obtaining Microsoft Certifications. The speaker gave an introduction and started presentation with the definition of skill development and its importance in today's world.

## Seminar on "Machine Learning and Robotics"

A seminars conducted on 5<sup>th</sup> feb'20, for the 3<sup>rd</sup> year students. Topics related to Artificial Intelligence, such as Data Science and Machine Learning were discussed very diligently by Dheeraj Singh, member of Training Basket. He spoke about the impact of AI on the wider world by briefing about the main components of Machine learning. He explained the basic difference between supervised, unsupervised and reinforced.



## STUDENTS' ACHIEVEMENTS

- Dhananjay Sachdeva of 3<sup>rd</sup> year secured the first position in the ET Campus coding star, in 30 Apr'20.
- Mridul Gandhi, Rohan Arora & Aditya Srivastava of 3<sup>rd</sup> year secured second position in the Ulnccept Hackathon at Ulnccept Accelerator, in Feb'20.
- Maryada Sharma & Milli Guleria of 3<sup>rd</sup> year won silver medal in 4\*100m relay in Ignite'2020, organised by IGDTU .
- Rajat Upadhyay, Anant Mathur, Rishabh Raizada and Nikhil Rana, of 2<sup>nd</sup> year secured 1<sup>st</sup> position in Hackathon HackDucs organised by Delhi University in Feb'20. They also won the prize for the best use of Microsoft Azure API.
- Rajat Upadhyay and Rishabh Raizada of 2<sup>nd</sup> year (Batch 2018-22), secured title of the most innovative hack, in Hackathon HackVips, organised by VSIT(VIPS) in Jan'20 at VIPS, New Delhi.
- Sarthak Yadav, of 2<sup>nd</sup> year, won 3<sup>rd</sup> best Adjudicator in Vitark National Parliamentary Debate, by Deen Dayal Upadhyya College, in Jan'20.
- D. D. V. Sai Ashish, Sakshi Munjal & Mayank Mani, of 2<sup>nd</sup> year, won the prize for best use of MapMyIndia SDK and API, in HackVSIT, held at Vivekananda Institute of Professional Studies, Delhi, in Jan'20.
- Sakshi Munjal, of 2<sup>nd</sup> year, grabbed a LiFT scholarship recipient in the category 'Women in open source', in Jun'20.
- Siddharth Sen, of 2<sup>nd</sup> year, has been selected for Google Summer of Code 2020 for 3 months on May, 2020

FACULTY  
ACHIEVEMENTS

## Technical Papers Published:

- Kavita Sheoran, Pradeep Tomar & Rajesh Mishra, "A novel quality prediction model for component-based software system using ACONM optimized extreme learning machine", Cognitive Neuro dynamics, Apr'20.
- Pooja Kherwa and Poonam Bansal, "Semantic N-Gram Topic Modelling", EAI Endorsed Transactions on Scalable Information Systems, Feb'20.
- Naresh Kumar, Jatin Bindra, Rahul Mattoo, Rajat Sharma & Varun Taneja, "Deeper into Air Pollution Forecasting: A Comparative Study of Deep Learning Models on Air Pollution Forecasting", Test Engineering Management, 2020.
- Sapna Malik, Simran Kaur, Sejal Rana, "Invisibility Cloak using Color Detection & Segmentation with Open CV", International Journal of Engineering and Advanced Technology, Vol. 9, Apr'20.

## Paper presented in national/ international Seminars/ Conferences:

- Shaily Malik, "Semantic Space auto encoder for cross Modal Data Retrieval", International Conference on Innovative Computing & Communication, in Feb'20, at Shaheed Sukhdev College of Business Studies.
- Priyanka Nandal, "Deep Learning in diverse computing and Network applications student admission predictor using deep-learning", International Conference on Innovative Computing & Communication, held in Feb'20, at Shaheed Sukhdev College of Business Studies, University of Delhi.

## Other Achievements:

- Dr. Geetika Dhand was awarded with Certificate of Excellence in Research-2019 on Annual Day, in recognition of outstanding contribution to quality of Research.

## FACULTY ACHIEVEMENTS

### Technical Papers Published:

- Naveen Dahiya, "An Intelligent Ranking Model for Multi-Criteria Decision Making using Fuzzy Matrix Method", Recent Advances in Computer Science and Communications (2020).
- Nishtha Jatana, "An Improved Crow Search Algorithm for Test Data Generation using SearchBased Mutation Testing", Neural Processing Letters, Springer US, June'20.
- Nishtha Jatana, "Particle Swarm and Genetic Algorithm applied to mutation testing for test data generation: A comparative evaluation", Journal of King Saud University Computer and Information Sciences, Elsevier, May'20.
- Adeel Hashmi, "FAAD: A Self-Optimizing Algorithm for Anomaly Detection", International Arab Journal of Information Technology, Mar'20.
- Neeti Sangwan, "Comprehensive Contemplation of Probabilistic Aspects in Intelligent Analytics", International Journal of Service Science, Management, Engineering, and Technology, IGI Global, Volume 11, Mar'20.
- Gunjan, "Anomaly Detection Using Federated Learning", ICAIA 2020, Advances in intelligent systems and computing, Springer, Vol. 1164, held on 6<sup>th</sup>- 7<sup>th</sup> Feb 2020 at MSIT, Janakpuri, New Delhi.

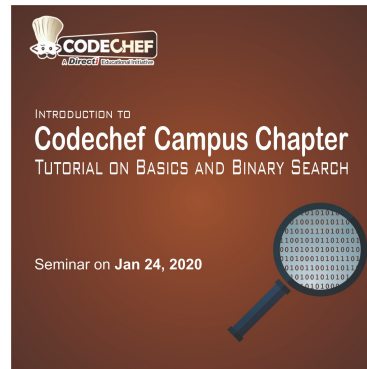
### Other Achievements:

- Dr. Naveen Dahiya successfully hosted a special issue entitled 'Advances in Intelligent Data Analytics and Computational Techniques' for the Journal International Journal of Information Retrieval Research, IGI Global as a guest editor. The special issue can be viewed online at IJIRR home page @ Vol. 10, Issue 2, ISSN: 2155-6377, EISSN: 2155-6385.

## EVENING SHIFT

### Workshop on "Competitive Programming"

A workshop was organised on 24<sup>th</sup> Jan, 2020 for CSE students to spread awareness and knowledge regarding competitive coding. Ayush Mahajan, a third year computer science, started a CodeChef chapter for helping out the student's to start with competitive programming. By following a schedule and syllabus over a course of time in various classes, it aims to deliver the complete knowledge of competitive programming to students to be able to solve competitive problems on their own.



### Workshop on "Python and Digital Marketing"

A seminar/workshop was conducted for the students of CSE on 25 Feb, 2020, on python and digital marketing by TechSoc where two experienced professionals came to interact and impart the knowledge to students about the high in demand skills that will make the students able to crack internships and make technical projects. The students turned up in a big number and made the event a huge success.



## STUDENTS' ACHIEVEMENTS

- Rijit Singh, a student of 2<sup>nd</sup> year, secured 3<sup>rd</sup> position in 18<sup>th</sup> Delhi International Open Grandmasters Chess Tournament'20 at Indra Gandhi Indore Stadium, New Delhi, in Jan'20.
- Deepanshi Dabas, Ayushi, Mehak Lakhani, and Bharti Sharma, "Classification of EEG Signals for Hand Gripping Motor Imagery and Hardware Representation of Neural States Using Arduino-Based LED Sensors", ICAIA 2020. Advances in intelligent systems and computing, Springer, Vol. 1164, held at MSIT, Delhi, in Feb'20.
- Shubham Singh, Shantanu Bhardwaj, Hemlatha Pandey, Ms Gunjan, "Anomaly Detection Using Federated Learning", ICAIA 2020. Advances in intelligent systems and computing, Springer, Vol. 1164, held at MSIT, Delhi, in Feb'20.
- Satyam Chauhan, a student of 3<sup>rd</sup> year won ABC Swabhimani Scholarship.
- Ayush Poddar has been placed in Google at a package of Rs. 15 LPA.
- Rahul Devarani have been placed in Amazon at a package of Rs. 19 LPA.

## MORNING SHIFT

**STUDENTS' ACHIEVEMENTS**

- Tanay Aggarwal, 1<sup>st</sup> year, worked with Dr Abhinav Singh Verma from AIIMS, to develop a plasma bank for speedy recovery of Covid-19 patients.
- Preeti Bidhan, 3<sup>rd</sup> year, got NASDAQ Internship Offer 2020 July, 2020.
- Aniket Vashishth, of 2<sup>nd</sup> year, won 2<sup>nd</sup> position in Beatboxing competition conducted by Shaheed Bhagat Singh College online fest, in May'20.
- YashPreet, a 3<sup>rd</sup> year student, got 200<sup>th</sup> rank Globally in Coding competition, in Mar'20.
- Preeti Bidhan, of 3<sup>rd</sup> year, got 266<sup>th</sup> rank globally in Google Women IO Code, in Feb'20.
- Yash Handa, of 3<sup>rd</sup> year, became GitHub captain of GDG Cloud New Delhi in Feb'20.

**Technical Papers Published/Presented**

- Dr. Suman Mann, Ms. Yukti Arora & Ms. Shivani Anand, presented paper titled "Smart hospitals with the use of Internet of Things and Artificial Intelligence" in International Conference on Innovative Computing and Communication, Feb. 2020.
- Prashant R., Dr. Suman Mann & Eashwaran R, presented paper titled "Efficient data cube materialisation" in International Conference on Advanced Communication and Computational Technology, 2019.
- Dr. Anupama Kaushik, Ms. Nisha Choudhary, Ms. Priyanka, presented paper titled "Software Cost Estimation Using LSTM – RNN" in International Conference on Artificial Intelligence and Applications, Feb. 2020.

**FACULTY ACHIEVEMENTS****Technical Papers Published/Presented**

- Dr. Tripti Sharma, presented paper titled "Fuzzy based DBSCAN Algorithm to Elect Master Cluster Head and enhance the network lifetime and avoid redundancy in wireless sensor network" in International conference on Innovative Computing and Communication, organised by Shaheed Sukhdev college of business studies, University of Delhi, in Feb'20.
- Ms. Jyoti Arora presented paper titled "Hybrid KFCM-PSO Clustering Technique for Image Segmentation" in International Conference on Artificial Intelligence and Applications, Feb'20.
- Dr. Suman Mann, Ms. Meena, presented paper titled "Data Model Quality Metrics of Data Warehouse: A Survey" in International Conference on Innovative Computing and Communication, Feb'20.
- Suman Mann, Sakshi Hooda, "A focus on the ICU & Mortality prediction using a CNN-LSTM model", International Journal of Psychosocial Rehabilitation, Apr'20.
- Jyoti Arora, "An Enhanced Spatial Intuitionistic Fuzzy C-means Clustering for Image Segmentation" Procedia Computer Science, 2020.
- Dr. Anupama Kaushik, Ms. Nisha Choudhary, Ms. Priyanka, presented paper titled "Software Cost Estimation Using LSTM – RNN" in International Conference on Artificial Intelligence and Applications, Feb. 2020.

## EVENING SHIFT

**FACULTY ACHIEVEMENTS****Technical Papers Published**

- Sunesh Malik, R. Rama Kishore, Girdhar Gopal, "Genetic Algorithm based Optimized Image Watermarking method with Histogram and Butterworth Filtering", International Journal of Information Retrieval and Research, 10(2), 2020 ISSN- 2155-6377.
- Sunesh Malik and R. Rama Kishore, "Spiking neural network based scrambled watermark hiding in low-frequency region of digital image", Journal of Information and Optimization Sciences 41.2 (2020): 437-459.
- Sunesh Malik, R. Rama Kishore, "A Novel and Efficient Blind Image Watermarking In Transform Domain", Procedia Computer Science 167 (2020): 1505-1514.

**FDPs, Seminars, Workshop and Conferences attended**

- Ms. Sitender, Ms. Minakshi Tomer, Ms. Tripti Rathee, attended one-week FDP on "Machine Learning Using Python" held at MSIT, in Mar'20.
- Ms. Saba Khanum, Ms. Tripti Rathee attended one week workshop on "Blockchain Technology", organized by AICTE ATAL held at NPTI Badarpur, in Feb'20.
- Ms Saba Khanum attended five days FDP on "Blockchain Technology and Applications", conducted by EDUXLABS, in May'20.

## FACULTY ACHIEVEMENTS

### Technical Papers Published

- P. Azad, "Design and Analysis of a Synchronised Interface Circuit for Triboelectric Energy Harvesting," Journal of Electronic Material, vol.49, 2020.
- D. Yadav, P. Azad & R. Vaish, "Solar Energy Harvesting using Candle Soot Coated Thermoelectric Materials," Global Challenges, 2020.
- D. Deshwal, P. Sangwan & D. Kumar, "A Language Identification System using Hybrid Features and Back-Propagation Neural Network," Applied Acoustics, vol. 164, pp. 107289, 2020.
- P. Sangwan, D. Deshwal, D. Kumar & S. Bhardwaj, "Isolated word language identification system with hybrid features from a deep belief network," International Journal of Communication Systems, 2020.
- N. Rathee & S. Pahal, "Investigation of Facial Expressions for Physiological Parameter Measurement", in Advances in Computing & Intelligent Systems 2020, Springer, Singapore.
- A. Balyan and Y. Singh, "Classifying Breast Cancer Based on Machine Learning," In Proceedings of International Conference on Artificial Intelligence and Applications, Springer, Singapore, 2020.

## STUDENTS' ACHIEVEMENTS

- Aryan Verma, of 2<sup>nd</sup> year, stood 1<sup>st</sup> in Science exhibition event of ChemCrown'20, held at Atma Ram Sanatan Dharma College, University of Delhi, in Feb'20.
- Tavneet and Vimal, of 2<sup>nd</sup> year, stood 1<sup>st</sup> in HackJNU V1.0 held at JNU, in Jan'20.
- Tavneet and Vimal, of 2<sup>nd</sup> year, have been selected for the grand finale of Smart India Hackathon 2020, a national initiative launched by AICTE and MHRD.

## ELECTRONICS AND COMMUNICATION ENGINEERING

### MORNING SHIFT

#### Seminar on "Building an Entrepreneurship Ecosystem"

An engrossing talk on 'Building an Entrepreneurship Ecosystem' was arranged by ECE department, on 20<sup>th</sup> Feb'20, organised by Dr. Puneet Azad. Renowned Prof. Rajesh Nair, Director and Professor of Practice, Innovation and Entrepreneurship Centre, Asia School of Business was invited to present the talk. It aimed at igniting the spark of entrepreneurship.



#### Seminar on "Microwave Measurements: Interdisciplinary Area"

A lecture was organised on 25 Feb'20, by Dr Shaifali M. Arora. It was delivered by highly accomplished expert by Dr. S.K. Dubey, Scientist, Apex Level Standards & Industrial Metrology, NPL, Delhi. He discussed about biological effect of EM radiations, Electromagnetic Induced transparency, E-field Probes and sensors, SAR probes, micro strip antenna, IoT, 5G, milli-meter waves, and computational modelling of biological tissue in EM radiations. Dr Dubey talked about various ongoing DSD projects and various upcoming research fields in electronics and communications.

#### FDP on "Machine Learning using Python"

A Faculty Development Program was organised at MSIT by ECE Department, in Mar'20, on "Machine Learning with Python". Coordinated by Prof. Archana Balyan, the topics covered in the FDP like: Image Processing for face recognition and object detection, Linear Regression, Natural Language Processing for text classification and voice recognition etc. were of much interest for all the attendees.

### EVENING SHIFT

#### Seminar on "How to achieve your goals"

A seminar was organised by ECE Department in association with Rotaract Club of New Delhi, in Jan'20. The Speaker for the session was Ms. Shruti Jain. The session consisted of information on well-being and positive approach toward goals. The speaker spoke about the connection between emotions and body structure with how a person feels and what kind of impression he/she puts on others. In the topic of body structure, the key part was kind of poses, which included high poses, which makes one feel enthusiastic and energetic and low poses, which makes one feel sad and low. A couple of activities were held during the sessions from which one was setting priorities to build someone's personality and the second was about high power visualisation. At the end doubts were addressed and answered by the speaker. Overall the seminar turned out to be extremely helpful for the students to increase their work efficiency.



# ELECTRICAL AND ELECTRONICS ENGINEERING

## Webinar on "Energy Efficiency in Smart Buildings through IOT Sensors Integration"

An international webinar was conducted by EEE department, along with IEEE PES MSIT, in Jun'20. The keynote speaker was Prof. Saifur Rahman, the Director of Virginia Tech Advanced Research Institute, USA, and the President of IEEE PES 2018 & 2019. He spoke about the necessity of finding ways to save energy and create smart buildings using IoT sensors. Through a creative presentation, he illustrated how devices like environment sensors could be used to measure the amount of CO<sub>2</sub> and temperature of the room and other devices like smart plugs and power meters could be used to control loads in a building to improve energy efficiency. He further explained the method of implementation by discussing the real example where he along with his team had practiced the method. He then gave insights about the current scenario and enlightened everyone with links to some leading companies which are taking this initiative. Following the presentation, there was a quick discussion among teachers about the same after which the platform was open for students to give suggestions on what practices should be done to increase energy efficiency and how the use of IoT Sensors could ease the case. The webinar ended with the host giving the vote of thanks to the speaker and wishing him luck for being a candidate for IEEE President 2020-21.

## APPLIED SCIENCES

### FACULTY ACHIEVEMENTS

#### Technical Papers Published/Presented

- ▶ Ajay Gahlot, "The effect of dust grains on the Weibel instability in presence of large amplitude electrostatic waves", Physics of Plasmas Journal.
- ▶ Sheela Malik, "Investigation of structural, ferroelectric and magnetic properties of iron doped tungsten bronze multiferroic ceramics", Physica B: Condensed matter Journal.
- ▶ Dr. Rashmi Gupta presented a research paper in International Conference on "Cinematic representation of Subaltern and its reality in 'The Gypsy Goddess' by Meena Kandasamy" on January 30, 2020 organised by MRIIRS, Faridabad, Haryana.

#### FDPs, Seminars, Workshop and Conferences attended

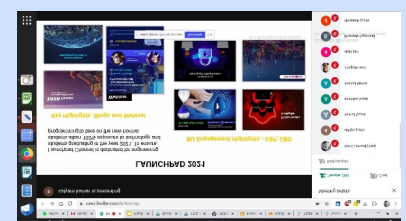
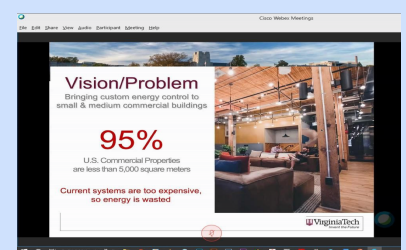
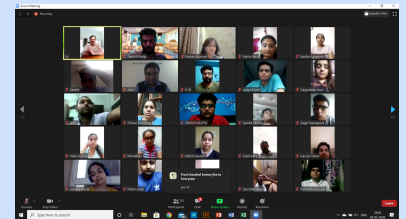
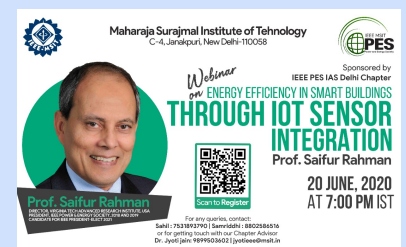
- ▶ Dr. Gitanjali participated in one week Faculty Development Program on "GeoGebra", organised by Department of Mathematics, R. K. College in association with Spoken Tutorial Software Training Project developed by IIT, Mumbai, in May'20.
- ▶ Dr. Gitanjali delivered an online Invited talk on the topic "Scope of Career in Statistics", organised by the Department of Mathematics, R. K. College, Madhubani, Bihar, in May'20.
- ▶ Dr. Rashmi Gupta participated in Webinar on "Smart Skills for on line Teaching", organised by Ansal University, Gurgaon, in May'20.
- ▶ Dr. Rashmi Gupta participated in National Webinar on "Essence of Managing Time: Holistic Development of life", organised by Mount Carmel College, affiliated to Bengaluru Central University, Bengaluru, in May'20.
- ▶ Dr. Rekha Tripathi participated in MSI Webinar Series on "Ethical Issues in Research" by Prof. H.L. Verma, Vice Chancellor, Jagan Nath University, Haryana.

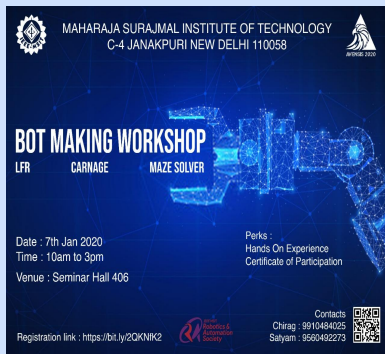
### FACULTY ACHIEVEMENTS

- ▶ Ms Jyoti Jain has been awarded degree of Doctor of Philosophy in Electrical Engineering.

### STUDENTS' ACHIEVEMENTS

- ▶ Aakriti Kaul, of 2015-2019 batch, has got admission in MS in Business Analytics at University of Sydney, Australia.





## COLLEGE SOCIETIES

### IEEE

#### Seminar on “Breezing through G.SoC”

This event was organised in Jan'20, and it covered what?, when? and how? of Google Summer of Code 2020. Former GSoCer Mr. Sanyam Dogra, a student of MSIT, was invited as the chief speaker. The event started with an introduction to the GSoC followed by several guidelines given to students like advantages of active GitHub profiles, exposure of working in different environment, etc.

#### Seminar on “Profile Building”

A session was conducted on Profile Building in Feb'20. The Speaker for the session was Mr. Sahil Khurana, MSIT Alumnus. He has coded the entire frontend of the officially deployed website of MSIT and has also led the web team of IEEE MSIT. The session started with how to build a good LinkedIn Profile. It was followed by how to connect with companies on LinkedIn and getting a job through LinkedIn.

#### Codezinga

IEEE MSIT CS Chapter in Collaboration with Redsword-Codechef Campus Chapter successfully conducted an online Competitive Coding Competition, in Feb'20. The participating students had to solve 4 challenging questions which required students to implement various Algorithms, efficient approach.

#### PES Day Celebration: Forge

The IEEE PES MSIT as a part of the International PES Day virtual celebration conducted a virtual idea-sharing event– ‘forge’ – ideas for reconsideration. It aimed at fusing imagination and technology to come up with brilliant ideas for ways to avoid touching surfaces, in order to protect and elevate society from the shades of this global pandemic.

#### STAR Program

WIE IEEE MSIT in collaboration with Rotaract Club of New Delhi Next organised a Star Program, at Bal Sewa orphanage, New Delhi. The session started with an educative session of 1 hour related to various water conservation practices and the hazards of reckless loss and degradation of the available fresh water sources. It was then followed by a poster making competition on the same theme of water conservation.

#### Webinar on Object Detection

This was an online event conducted on IEEE MSIT official YouTube channel. The event started with Mr. Abhishek Parashar explaining about Object Detection and opportunities and its application. The speaker then explained about mathematics behind the domain. The session concluded with a hands on working on a project.

#### #IamRemarkable Session

WIE IEEE MSIT organised an online #IamRemarkable Session for girls from different colleges, in Apr'20. #IamRemarkable is a Google initiative empowering women and underrepresented groups to speak openly about their accomplishments in the workplace and beyond. The workshop provided an insight to why self-promotion is important and how it can help one become more successful in their personal as well as professional life.

#### Webinar on “Industry Insights of Cloud Computing”

IEEE MSIT brought an engaging webinar on Industry Insights of Cloud Computing by Mr. Vipul Rajput. It was an interactive forum for the aspirants to learn more about how they can pave their career path in the rapidly growing cloud computing field. The topics covered were Impact of cloud computing in today's technological landscape, Role and job profile of a cloud engineer, etc.

## Bourn UPSC

BOURN UPSE was organised in May'20 in collaboration with The Game Changer, UPSC training academy, on Zoom meeting platform. Our speaker was Mr Alok Kumar. The students were informed about the phases of the UPSC examination and what importance each of them held. Every attendee was made aware of the exam pattern.

## The Talk Show by Sidhant Bhat

IEEE PES MSIT organised The Talk with Sidhant Bhat which was a series of talk shows in which the students had an opportunity to interact with their seniors and gain the insights of the importance of the field of research and development. The speakers of the event were Kirthik Vasani (MSIT) and Varun Ramanathan (IIITD).

## E-CELL

### Workshop on “Soft Skills”

A workshop was conducted in Feb'20 and the speaker was Mr Shivang Sinha, a successful entrepreneur. He addressed students on the topic of the concept of the importance of soft skills in professional life. The workshop not only just taught the students how to speak or what's the method to say something, but it also guided them on how to represent themselves.

### Visit to Entrepreneur Park

An Industrial visit to the Entrepreneur Park was organised in Feb'20. 15 students were accompanied with 8 teachers and the mentor for the visit were Dr. Neeru Rathi and Dr. Prabhjot Kaur. The visit had brought greater outlook towards the attendees and provided experience in the field of the same subject.

### Faculty Development Program- GST using Tally

Tally Education Pvt. Ltd. organised a Faculty Development Program, in Jun'20, that covered concepts of Goods and Services Tax (GST) and its Business Applications using Tally. It was a 3 hour live stream conducted by Mr Bijay from Tally Education Pvt. Ltd, which included a session where the attendees were asked to clear their doubts, and to give in their suggestions and reviews.

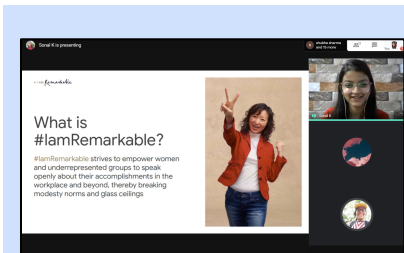
### Webinar on “Depression among students and corporates”

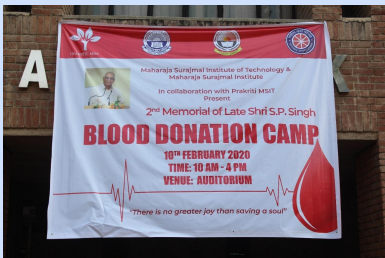
E-cell MSIT in collaboration with NSS MSI organised a webinar in Jun'20. The speaker for the webinar was Ms. Suhasini Raina, who is a mental health professional and completed her Masters from TISS, Bombay and is currently a researcher at AIIMS and runs an independent practice. She is a person full of wisdom and enlightened the students with her knowledge on the topic.

## UNNAT BHARAT ABHIYAN CELL

### Multidisciplinary Work Progress in Adopted Villages

UBA Cell MSIT has been committed to solve the problems faced by the residents of five villages namely Asalatpur, Dabri, Nangli Jalib, Nangal Raya, & Tihar Gaon by suggesting innovative solutions. A lot of multidisciplinary work has been carried out in the villages. Five technical projects have been submitted on UBA portal for grant. One proposal has been reviewed by SEG and clarification for some queries has been submitted again. Rest 4 are under review process. Student and Faculty coordinators were appointed for each village. An extensive awareness campaign was started in collaboration with the drama society of MSIT, 'Aarambh' which presented a nukkad natak in the focal area of the village. The teams surveyed through the breadths of the villages, gathering data looking into the problems faced by the residents in day to day life. They also organised gram sabhas and chaupal sabha with the village residents and the members of the governing body,





in order to get an insight into their problems and making them aware of the niche governmental schemes for their benefits. In order to achieve the goals and vision of UBA, Village Development Plans (VDPs) were formed and laid out. Rallies were conducted on the occasion of Gandhi Jayanti to commemorate his ideals of cleanliness. An app and website was developed for COVID-19 by UBA students.

## NATIONAL SERVICE SCHEME MSIT

### Session on “Meditation and Motivation”

On the occasion of Sports day and in order to promote the spirit of a healthy mind, body and soul, a seminar on Meditation with Sahaj yoga was conducted. The soulful session included unfurling the inner energy to get peace and choosing the right path. The fifteen minutes meditation along with talk sessions by Mr Navin Gulia and Mr Nirmal Solanki, were held.

### Oath Ceremony for Swacchhta Bharat Pakhwada

NSS MSI and NSS MSIT, in collaboration with Prakriti MSIT, organised an oath ceremony for Swacchhta Bharat Pakhwada, in Jan'20. This initiative has been taken to inculcate the need for cleanliness and sanitation among children, parents and teachers; and to encourage and inspire them for taking care of the hygiene and sanitation in schools, colleges as well as in-home.

### Blood Donation Camp

NSS MSIT has been consistently striving to promote social wellbeing and contribute towards various crucial subjects of society through their initiatives. To celebrate the spirit of humanity, NSS MSIT organised a Blood Donation Camp, in collaboration with the Rotary Blood Bank, in Feb'20.

### Workshop on “Self-Defence”

With an aim to generate awareness about the importance of self-defence, NSS MSIT in collaboration with Knock Out Martial arts and Fitness Foundation organised a 2 hr self-defence workshop in Mar'20. Mr Rahul Bhasin appraised the students about the importance of self-defence and demonstrated various techniques that can be used in real-life scenarios.

## INCUBATION CELL

### MHRD Innovation Ambassador training programme

Innovation Ambassador Training Programme: Design thinking and Innovation was organised in Jan'20, hosted by LPU, Punjab. This was organised under the innovative initiatives of MHRD Government of India, its Innovation Cell and Institution's Innovation Council. The objective through this series was to drive innovation and start-up ecosystem.

### Idea Competition

This event was organised by Innovation Cell, MSIT, in Feb'20, to encourage students for innovative thinking. A total of 25 teams registered in the event who presented their ideas on problems based on various themes including Water conservation, energy harvesting, mobile applications, disposal management, etc., to different applications.

### Internal Hackathon

The event was organised in Jan'20, in order to shortlist teams for participating in Smart India Hackathon 2020. There were two editions: software and hardware. A total of 22 teams registered in the event who presented their ideas on the problems already given by SIH.

## PLACEMENT COORDINATION TEAM

### Infosys webinar

A webinar as well as an interactive session was conducted in Jan'20 with the purpose to make the students aware about InfyTQ platform and the opportunities that they can get by being a part of it. The session speakers were Ms. Kamaljeet Kaur and Ms. Shaan Vats.

### Session by Aon Cocubes

In Feb'20, India's leading online assessment and hiring platform conducted a seminar for the students of the pre-final year students of MSIT. Mr.Karan from Cocubes briefed the students that the organisation runs assessments to measure employability across all domains.

### Session by Aspiring Minds

A session was conducted in Feb'20 to inform the students about the benefit of giving AMCAT exam. The session was conducted by Mr. Jasmeet Sethi. He told the students about the Aspiring Minds which conducts the test. The scores obtained in AMCAT test are considered by many companies for their recruitment process.

### ZS Brown Bag workshop

A workshop was organised by ZS Associates, in Feb'20. The workshop was conducted by Ashish Bhambhri, along with his team members. The orators explained about work done at ZS Associates. The workshop delivered numerous benefits. It helped students understand requirements of the interview. Students were informed about a competition that would augment their skills.

### Webinar by Byjus

A webinar was conducted by Byjus in Jun'20 to inform the students about the importance of profile building, how to get into Fortune 500 companies, how to get into Masters with scholarship and other relevant topics. The webinar was hosted by Abhishek Gupta.

### IHS Markit Guest Lecture

A virtual guest lecture was organised by the company IHS Markit in May'20. The topic covered was "Trade flow monitoring using Big Data Analytics" by Mr. Sanjay Manjhi, Director, IHS Markit. A brief discussion about various Data Science careers - Researcher, Data Scientist, ML scientist, software engineering, data engineering, etc. were covered.

### Reference Global Program

It was a Digital engagement program, conducted in Jul'20, aiming at improving students' aptitude and quantitative skills through various tutorials and tests. Apart from the non-technical part, there were sessions to improve programming skills of the students.

### Talentsprint program

Talentsprint conducts live interactive training based on technical skills, communication skills and aptitude skills. This program is mainly held for Google. Only 100 limited slots were available for this program. However the placement department pushed for and accommodated 102 top students for this program.

### TCS Campus commune webinar

TCS campus ambassador of Batch 2021 organised a webinar in Jun'20 to inform the students about the benefits of Campus commune portal of TCS and how to register for the same. They were told about the wide range of channels available at campus commune along with launchpad 2021.

### Webinar on "VLSI Design Industry -The scope & job market by Golden Light solutions"

A webinar on VLSI design industry was held for 12 selected students and faculty members in Jun'20. The aim of the webinar was to inform the students about the current trends in VLSI design industry, what VLSI is all about and what can be the job prospects in VLSI.

### Great Learning program

The Great Learning Program offers over 80 courses spanning over 1000+ hours of learning in digital areas such as Data Science, AI, Machine Learning, Cloud Computing etc. 29th June 2020 was the last registration date. However, 1000+ hours of learning can be done at any time according to convenience of students. Students are also provided course completion certificates. 105 students from all years (Batch 2021, 2022, 2023) have registered for the same.



EDITORIAL TEAM MEMBERS

Chief Editor: Dr. Rinky Dwivedi, Associate Professor, CSE Department  
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 Sakshi Gill, CSE Department, 4<sup>TH</sup> year, Morning shift  
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 Maryada Sharma, CSE Department, 4<sup>TH</sup> year, Morning shift