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CCE PULSE

Department of Computer and Communication Engineering



About CCE Department

Department of Computer & Communication Engineering Manipal University Jaipur marked its commencement in 2015. The goal of the department is to integrate computer and communication, which includes concepts and practices of software and hardware of computers, information networks, wireless communication systems etc. The Department of CCE offers one of the most comprehensive instructional programs enhanced with research in its emerging fields. Research at the department addresses issues across the spectrum of Computer as well as Communication engineering systems. Some of the key areas include Machine Learning, Internet of Things (IoT), Web Technologies, Advance Computer Networking, Network and Information Security, Wireless Communication, Network on Chip (NoC), Software Testing, Computer Architecture and Embedded Systems. The CCE department also promote and nurture the spirit of innovation and entrepreneurship among students to enable them, not only to be industry ready, but also to be job creators. CCE offers collaborative programs for students and faculty, with many IT giants Dell, Microsoft, EMC2, Oracle, Nvidia, Intel, TI, ARM, EC Council, etc.

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Chief Editor
Prof. Sunil Kumar

Associate Editor
Dr Hemlata Goyal

Student Editor
Ms. Rishwari Ranjan



From The Magazine Team

Dear Readers,

Welcome to the edition of our departmental magazine. In this edition, we try to bind together each aspect of our CCE family, and we hope it inspires every member to actively contribute to the development of department academically and in extra-curricular activities. It represents the creative side of our students to a fair degree—something that we think we all need to reconnect with, amidst the busy schedule of semester exams, surprise quizzes and all those assignments that make you want to bang your head on the wall. This magazine provides a platform for students and staff to share information, spread the latest technical knowledge and cultivate right ways that will equip all of us to stay competent in our respective fields of study, and activities.

We thank all of you who stood by us patiently and contributed to the development of our magazine when there were days when the only thing, we had to offer was our own confusion.





One Week ATAL FDP

Mathematical Modelling and Simulation of Dynamic Systems related to Cyber Defense

AICTE Training and Learning (ATAL) Academy Sponsored One Week Online Faculty Development Program (FDP) on Deep Learning and Computer Vision on Monday, 3rd January at 9:30 am. Prof K K Agarwal, Chairman NBA was the chief guest of the event. Prof Agarwal delivered very impressive note on Deep Learning and Computer Vision. He emphasized on the use of technology in solving the real-life problems. He enunciated multi-disciplinary collaboration to utilize the technology in different aspects of life.



Dr. Shally, Assistant Professor MUJ anchored the session. Prof Sunil Kumar, coordinator of the FDP shared the theme and topics to be covered in the FDP. Dr. Neetu Bhatnagar, Registrar, MUJ highlighted MUJ journey of quality education.

Prof. Rajveer Singh Shekhawat, Dean, Faculty of Engineering shared his views on the evolving field of deep learning and computer vision. Prof V. S. Dhaka, HoD, CCE department proposed vote of thanks and concluded the event. The technical sessions in the FDP will be conducted by resource persons from IITs, IIITs, NITs, CSIR Lab, and Nvidia. 200 participants from more than 20 states have registered for the FDP. Prof. Manu Vohra observed the proceedings as AICTE FDP reviewer. The teachers from higher and technical education will be benefited from this FDP.

Extramural Lecture Series

Youth and Challenges

School of Information Technology, Manipal University Jaipur, Department of Computer and Communication Engineering organized in online mode under Extramural Lecture Series on Jan 27th 2022. The speaker and guest for this lecture was Ms. Geetika Jakhar, DSP-Haryana Police. Geetika comes from a family of sports persons. She got Arjuna Award - 2006(Wrestling). She is the only women wrestler in the history of Indian sports to be judged the Best Wrestler of the 2005 Commonwealth Games and also who won medals at Asian Games 2006 and 2014 respectively.



Geetika is the first women wrestler being awarded with the Arjuna Award by Government of India in 2006. She is also a proud recipient of Bhim Award by government of Haryana. For her extraordinary achievements in the field of sports, the government of Haryana has appointed her to the post of Deputy Superintendent of Police.

Prof. (Dr.) G. K. Prabhu (President, MUJ) & Prof. (Dr.) N. N. Sharma (Pro-President, MUJ), Registrar, Prof. (Dr.) Nitu Bhatnagar, Dean & Director, FoE, Prof. Rajveer Singh Shekhawat conveyed honour and welcome to Ms. Geetika Jakhar. Vote of thanks was expressed by Prof. Rajveer Singh Shekhawat, Dean & Director, FoE. The entire event was smoothly conducted by Prof. (Dr.) Vijaypal Singh Dhaka, HoD, Deptt of CCE with the decennial committee. The session was dedicated towards the sports activity, challenges in sports, and full acknowledged with enthusiasm and motivation from the speaker as well as the students. Video URL

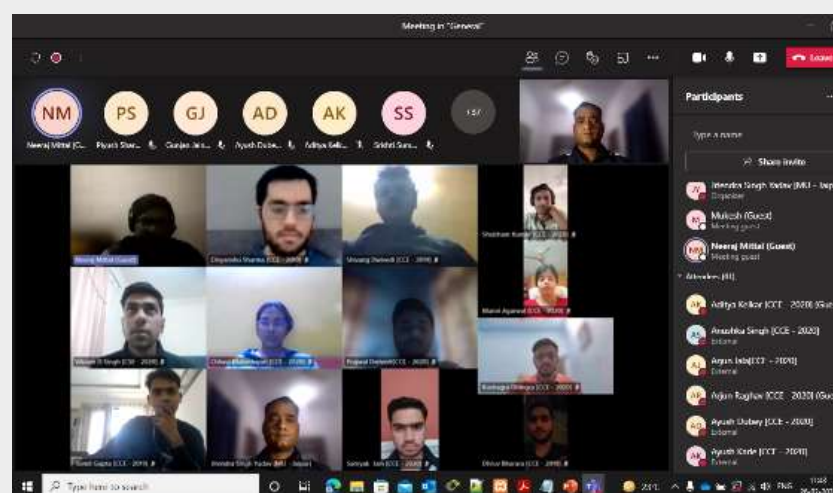
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Expert Lecture on Basics of Solidity Programming (Blockchain)

Department of Computer and Communication Engineering organized the expert lecture “Basics of Solidity Programming (Blockchain)” was conducted via virtual mode for minor projects and second year students by the Department of Computer and Communication Engineering, Manipal University Jaipur on 26th February 2022. The resource person of the event was Mr. Neeraj Mittal, Team Lead, DotSquares Technologies India Private Ltd. The objective of the event was to acquaint the students about the basic programming concepts of solidity for creating smart contracts on Blockchain. More than 50 participants participated in this virtual event.

The expert provided an insight into the basics and application areas of Blockchain network, and programming syntax of Solidity language. He talked about smart contract creation for enforcing crypto rules and demonstrated Remix-IDE web-based tool for coding and demonstrated the explained concepts followed by a coding session.

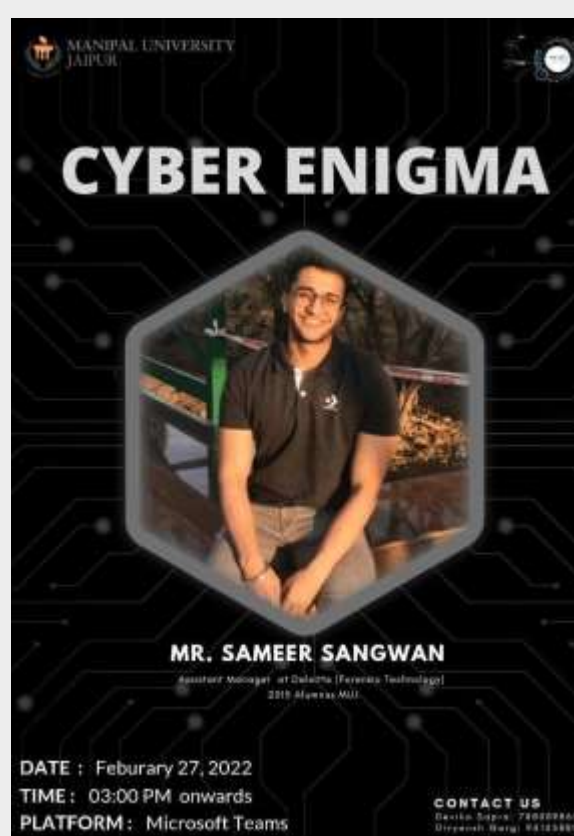


Video URL

<https://teams.microsoft.com/l/meetup-join/19%3avuExFbZyNjXz40Im-qcHdQ8-EwUhm3V2ZL-i6ODzGcA1%40thread.tacv2/1645760447009?context=%7b%22Tid%22%3a%22a1608842-8390-4bfb-90af-89ae3ab30761%22%2c%22Oid%22%3a%225a981c68-7985-4688-8258-97de32afdf6f%22%7d>

One Day Workshop Webinar on Cyber Enigma

Panacea, Computer and Communication Club of Manipal University Jaipur organized “Cyber Enigma”, a webinar on Cyber security and Ethical Hacking on 27 February 2022. The event was addressed by Mr. Sameer Sangwan, a Manipal University Jaipur alumnus and a specialist in the specific fields. Mr. Sameer Sangwan graduated in the year 2019 from MUJ (BTech in CCE) and is currently working as Assistant Manager at Deloitte (Forensic Technology, Offshore),



The entire session was highly informative and interactive on what exactly cyber security means, what are the threats posed to our systems, how can we protect ourselves against cyber-attacks and finally how to get started in the vast amusing sector of hacking in an ethical manner



Alumni talk on Career Growth and Future Opportunities

School of Computer and Communication Engineering, organized an Alumni talk on “Career Growth and Future Opportunities” for the III year students on 23rd June 2021.



An alumni talk on “Career Growth and Future Opportunities” addressed by Mr. Sarthak Agarwal: Software Developer Engineer-II, Dell, Mr. Sushant Mehta: Software Developer Engineer-II, Trell, Mr. Virat Kumar: Consultant Data Science Engineer, Celebal Technologies, Ms. Shreya Khandelwal: Senior Analyst, Accenture. Alumni team discussed the latest technologies, trends, and future opportunities with a roadmap of numerous possible opportunities in the IT industry.



The main objective of this event for the students to interact with their alumni and learn from their experiences about various opportunities in the field of Cyber Security, Ethical Hacking in IT Industry and know what difficulties lie in the respective fields, ultimately how to overcome them.

It also sheds light on the future trends in technologies and how one can strengthen to be Industry ready path to follow to be placement ready for every individual one. Director (SCCE), Prof. (Dr.) Vijaypal Singh Dhaka, conveyed their blessings to all alumni students to connect with their juniors. Vote of thanks was expressed by Prof. Sunil Kumar and Prof. Manoj Bohra and Dr. Punit Gupta. The event was smoothly conducted by Assistant Professor Mr. Prashant Hemrajani.

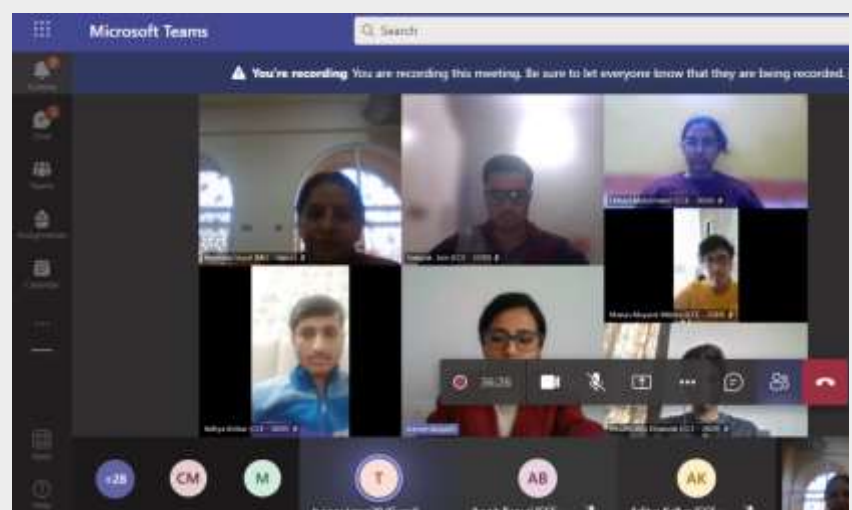
Online Training Session

Practical ways to reduce mental stress to perform well in career and lead healthier life

An online training session on "Practical ways to reduce mental stress to perform well in career and lead healthier life " by Trainer, Ms. Tanya Gahoi, Diploma in Nutrition, FAB academy,



California, USA; Train the Trainer, Image Consulting Business Institute, Pune, is conducted for B.Tech. II year students on 2nd Feb 2022.



Session was covered in practical ways with activity to reduce mental stress to perform well in career and lead healthier life for the B.Tech. Students.



I prize at HackStack'22 National Hackathon, IIIT Gwalior

Abhigyan Abhikaushalam Students' Forum IIIT Gwalior, MUJ Student team PushToMaster won the 1st prize at HackStack'22 National Hackathon organized at IIIT Gwalior sponsored by Headout on 20th April 2022. Student team of Somil Gupta [CCE - 2019 - Reg. No. 199303026 - Class 6A, Divyanshu Sharma [CCE - 2019 - Reg. No. 199303003 - Class 6A], Manavendra Sen [IT - 2019 - Reg. No. 199302058 - IT - Class 6A], Ayush Agrawal [IT - 2019 - Reg. No. 199302185 - IT - Class 6C] won the 1st prize at HackStack'22 National Hackathon organized at IIIT Gwalior sponsored by Headout and got prize money of INR 25,000.



National Level Outstanding award in Sports Category

Student of II year, Parth Mohan Choudhary, Registration No. 209303007 won National level outstanding award in Sports category in VARCHA'S IIT JODHPUR BASKETBALL in VARCHAS'22 on 10-04-2022 and received prize money of INR 5000/-.



National Level Outstanding award in Sports Category

Student of III year, Dhruv Kaushik, Registration No. 199303168 won National level II Prize award in Cultural category in Build.UI : UI/UX Hackathon Rendezvous'22 IIT DELHI, Design Club IIT Delhi on April 24, 2022.





University level Outstanding Senior Design Coordinator award

Student of II year, Sejal Kothari, Registration No. 209303070-won University level Outstanding Senior Design Coordinator award in Cultural category in IEEE Student Branch at MUJ.



National level outstanding award in Cultural category



Student of III year, Abhudaya Mehrotra, Registration No. 199303232 won National level III Prize award in Cultural category in Singing The Indigos: English Solo Singing Competition, Mood Indigo: the cultural fest of IIT Bombay on 29th January 2022 and received prize money of INR 3000/-.

National Level Outstanding award in Cultural Category

Student of II year, Harsh Kundan, Registration no. 209303014, won National level Prize award in Sports category in Bronze medal in 400m athletics, Silver medal in relay race archas'22 at IIT Jodhpur.





I prize at HackStack'22 National Hackathon, IIIT Gwalior

Student of II year Shubham Verma, Registration no won and recognized in Innovation as a Startup by The Government of India, made it to the final phase of Shark Tank India selection phase, incorporated with the Government, Made it to 100x.VC gurukul cohort (one of the leading venture capitalist firms in the country), Mentioned in Top 14 innovating audio startups based out of Gurgaon, Made it to Xartup Cohort, Registered as a MSME, Govt of India, Ministry of Corporate Affairs, Xartup, 100X.VC



Meet Oza got admission offer leer with scholarship (\$50,000) from CORNELL UNIVERSITY (Rank 4th in top 200)

Meet Oza from B.Tech-CCE received an admission offer leer with scholarship(\$50,000) from the USA's top IVY LEAGUE university CORNELL UNIVERSITY (Rank 4th in top 200) for Dual Master's degree in Applied Information Science(Research) and Applied Information Systems (Artificial Intelligence Research).

In recognition of his undergraduate academics and research publications, he has received one of the highest merit scholarships of ~40 lakhs (\$50,000) from Cornell. Besides it, he has also received admits from other top universities which are - New York University, the University of California San Diego, and the University of Southern California. He has published research papers in Q1 and Q2 top international Journals. He has also published 3 book chapters, 3 conference papers, and more than 5 research publications along with a patent "CovidScanner" under the mentorship of Director (SCCE) Prof. (Dr.) Vijaypal Singh Dhaka.

RESEARCH & PUBLICATIONS

Publication in SCI Indexed Journal

Dr Arjun Singh, published a paper title TOXGB: TEAMWORK OPTIMIZATION BASED XGBOOST MODEL FOR EARLY IDENTIFICATION OF POSTTRAUMATIC STRESS DISORDER, in Cognitive Neurodynamics, Scopus, Q1(Top 10-24) Journal, January 2022, <https://doi.org/10.1007/s11571-021-09771-1>

Dr Arvind Dhaka, published a research paper title ENHANCED WATERSHED SEGMENTATION ALGORITHM BASED MODIFIED RESNET50 MODEL FOR BRAIN TUMOR DETECTION, in BioMed Research International, Scopus, Q2(Top 25-49), Journal in February 2022, <https://www.hindawi.com/journals/bmri/2022/7348344/>

Dr Deepak Sinwar, published a paper title EFFICIENT STOCHASTIC MODEL FOR OPERATIONAL AVAILABILITY OPTIMIZATION OF COOLING TOWER USING METAHEURISTIC ALGORITHMS, in IEEE Access, SCIE, Q1(Top 10-24), January 2022, <https://ieeexplore.ieee.org/document/9682734>

Dr Geeta Rani, published a paper title ROLE OF ARTIFICIAL NEURAL NETWORKS IN PREDICTING DESIGN AND EFFICIENCY OF DYE SENSITIZED SOLAR CELLS, in International Journal of Energy Research, Scopus, Q1(Top 2-9), April 2022, <https://onlinelibrary.wiley.com/doi/abs/10.1002/er.7959>

Dr Lal Pratap Verma, published a paper title INFRARED SMALL TARGET DETECTION BASED ON PARTIAL SUM MINIMIZATION AND TOTAL VARIATION, Mathematics, Scopus, Q2(Top 25-49), February 2022, <https://doi.org/10.3390/math10040671>

Dr Manoj Kumar Bohra, Published a paper title MECHANICAL PROPERTIES OF BORON NITRIDE NANOSHEET REINFORCED ALUMINIUM NANOCOMPOSITE: A MOLECULAR DYNAMICS STUDY, in Molecular Simulation, Scopus, Q2(Top 25-49), April 2022, <https://doi.org/10.1080/08927022.2022.2060966>

Dr Punit Gupta, published a paper title HYBRID WHALE OPTIMIZATION ALGORITHM FOR RESOURCE OPTIMIZATION IN CLOUD EHEALTHCARE APPLICATIONS, Computers, Materials and Continua, Scopus, Q1(Top 10-24), January 2022, <https://www.techscience.com/cmc/v71n3/46488>

Dr Shashank Singh, published a paper title NPLAYER STOCHASTIC DUEL GAME MODEL WITH APPLIED DEEP LEARNING AND ITS MODERN IMPLICATIONS, Sensors, Scopus, Q1(Top 2-9), March 2022, <https://doi.org/10.3390/s22062422>



Book & Chapter Publication

Book Chapter, Dr. Arjun Singh, First-Author, February 2022, INTELLIGENT SCALABLE ALGORITHM FOR RESOURCE EFFICIENCY IN CLOUD, Machine Learning and Optimization Models for Optimization in Cloud, CRC press, <https://www.taylorfrancis.com/chapters/edit/10.1201/9781003185376-10/intelligent-scalable-algorithm-resource-efficiency->

Book Chapter, Dr. Arjun Singh, Co-Author, February 2022, INTRODUCTION TO VIRTUALIZATION IN CLOUD COMPUTING, published in Machine Learning and Optimization Models for Optimization in Cloud, CRC press, <https://www.routledge.com/Machine-Learning-and-Optimization-Models-for-Optimization-in-Cloud/Goyal-Goyal-Chakraborty-Elngar/p/book/9781032028200>

Book Chapter, Dr. Arvind Dhaka, Co-Author, March 2021, BIG DATA ANALYSIS: BASIC REVIEW ON TECHNIQUES, Advancing the Power of Learning Analytics and Big Data in Education, IGI GLOBAL, <https://www.igi-global.com/chapter/big-data-analysis/272956>, Big Data Analysis: Basic Review on Techniques,

Book Chapter, Dr. Sunil Kumar, February 2022, METAHEURISTIC ALGORITHMS FOR POWER EFFICIENCY IN CLOUD COMPUTING, Machine Learning and Optimization Models for Optimization in Cloud, Chapman and Hall/CRC, <https://doi.org/10.1201/9781003185376-9>

Conference Publications

Dr. Kusum Lata Jain, published paper in Conference Proceeding, AN UNSUPERVISED CLUSTERING ALGORITHM TO CLUSTER THE NEW SARSCOV2 VIRUS MUTATION, An Unsupervised Clustering Algorithm to Cluster the New SARS-CoV-2 Virus Mutation, Springer Nature, https://link.springer.com/chapter/10.1007/978-981-16-8987-1_19, Lecture Notes in Networks and Systems, Scopus, March 2022

Dr. Deepak Sinwar published Conference Proceeding, May 2022, INNOVATIONS IN COMPUTATIONAL INTELLIGENCE AND COMPUTER VISION (PROCEEDINGS OF ICICV 2021), Springer Nature, Singapore, <https://link.springer.com/content/pdf/bfm%3A978-981-19-0475-2%2F1>, Advances in Intelligent Systems and Computing

Dr. Punit Gupta, published a paper title HYBRID WHALE OPTIMIZATION ALGORITHM FOR RESOURCE OPTIMIZATION IN CLOUD EHEALTHCARE APPLICATIONS, Computers, Materials and Continua, Scopus, Q1 (Top 10-24), January 2022, <https://www.techscience.com/cmc/v71n3/46488>

Dr. Shashank Singh, published a paper title NPLAYER STOCHASTIC DUEL GAME MODEL WITH APPLIED DEEP LEARNING AND ITS MODERN IMPLICATIONS, Sensors, Scopus, Q1 (Top 2-9), March 2022, <https://doi.org/10.3390/s22062422>