

National Conference on Emerging Trends in Information Technology- 2019
(UGC Sponsored)

Organised by
Department of Computer Science, Kalindi College

On
1st and 2nd August 2019

Patron & Chair : Dr. (Ms.) Anula Maurya

Convener : Dr. Nidhi Arora

Co-Conveners: Dr. Vandana Gupta, Ms. Shalini Sharma

The UGC sponsored National Conference on Emerging Trends in Information Technology (NCETIT-2019) was inaugurated on August 1, 2019. The ceremony commenced with lightning of the lamp by the honourable chief guest Prof.(Dr.) Bhagirath Singh, Vice Chancellor of Maharaja Ganga Singh University, Bikaner, Guest of Honour Prof. Vasudha Bhatnagar, Head of Department of Computer Science, University of Delhi and Principal Dr.(Ms.) Anula Maurya. After welcoming of guests, Dr. (Ms.) Anula Maurya motivated all the participants and attendees with her words of wisdom. She also recited a beautiful poem and inspired all to always move forward. The extremely intellectual, Professor Bhagirath Singh who had more than 30 years of experience in the field of research, explained how important information era is for the national development. He also shed a light on data analysis, data mining and the challenges in the sector of Information Technology in future, and stressed that the conference should also focus on the overpowering of humans by AI and the effects of social media on society. The further proceedings of the ceremony were led by Prof. Vasudha Bhatnagar. She briefed everyone on the usage of Artificial Intelligence in vast variety of applications and the associated potential risks. She also discussed about the transparency of AI and the importance of algorithmic fairness. She wished for the success of the conference and congratulated the computer science department for a commendable job.

Total 81 participants registered for this two days conference. In overall 7 Keynote Talk and 6 Technical Paper presentation sessions were held during the conference. The venues were Administrative block seminar room for Keynote talks and Computer labs for Paper Presentations. In overall 42 abstracts were submitted for presentation in the conference from all over India out of which 34 were presented. A souvenir containing all the abstracts was also printed and released on the occasion .The 7 invited Keynote Speakers were renowned names in the field of Computer Science and IT from various prestigious Universities of India as listed below and were Prof R. K. Agrawal (Jawahar Lal Nehru University), Prof Khurram Mustafa (Jamia Millia Islamia University), Prof Devendra Kumar Tayal (Indira Gandhi Delhi Technological University), Dr. Hema Banati (Dyal Singh College, University of Delhi), Dr. Shikha Mehta (Jaypee Institute of Information Technology), Dr. Suraiya Jabin (Jamia Millia Islamia University) and Dr. Akshi Kumar (DTU). The six technical paper presentation sessions were chaired by eminent academicians and researchers as :Dr. Naresh Kumar, Professor (Galgotia University), Dr. Veenu Bhasin (PGDAV College), Dr.

Anamika(SSCBS, University of Delhi),Dr. Shalini Arora(IGDTUW),Dr. Darshna Hooda(Head University Computer Centre, DCRUST Murthal)

KEYNOTE SESSION-1 : The National Conference on emerging trends in IT was organized by computer science department of Kalindi College had its first keynote session on 1st August 2019 in the seminar room from 12pm to 1pm with the keynote speaker Prof K. Mustafa from Jamia Millia Islamia University. Prof Mustafa was warmly welcomed by researchers, teachers and students. The speaker started the session entitled “Information Technology: Trends and Tipping Points”. The session was quite the acquisition of technical facts and understanding. He covered the topics like purpose-the cursory overview in which he explained that IT is the king of all subject and it is not for one particular group but for all types of people, difference between Information Technology, Computer Science Information System where IT is developed as a tool, tool is evolved as a method and then becomes a process, IT horizons, recent trends (Gartner’s 2016, WEF’2016), trends 2018(Fuji software, forbes) and many more. He also discussed what are the challenges occurred in computer science in the field of non-classical computation, important work on storage, e-science, X-info and e-research. Many technical as well as philosophical questions were raised by the participants and answered by the speaker.

KEYNOTE SESSION-2 : Dr. Shikha Mehta , an associate professor from IIIT Noida was the speaker in keynote session 2. She spoke on the topic titled “Machine learning to deep leaning : A walkthrough ”. She interpreted the need of machine learning and explained that we are drowning into data. So, this much data can’t be handled by human. That’s why we teach our machines to do this work for us. But she raised a question if our machines can do it accurately? Further she expressed that Internet is the most unreliable source of data. Thus, it’s all up to us how accurate we have taught our machines to do work and how accurate are our algorithms that we have taught to our machines. So, to check accuracy machines are tested with small data first and then they generate their own algorithms to operate with big data. Next she also explained the three types of machine learning i.e. supervised, unsupervised and reinforcement learning. She said that machines can’t do machine learning unless we will teach them properly and accurately. Though it is a time taking and expensive process to teach machines but once it’s done, it’ll save human time and efforts a lot up to a great extent.

KEYNOTE SESSION-3 : Third keynote session on 1st August 2019 in the seminar room from 3pm to 4 pm started with the keynote speaker Prof D.K. Tayal from Indira Gandhi Delhi technology University. The speaker started the session entitled “Natural language processing of Hindi Language”. The session was quite the acquisition of technical facts and understanding. He gave us the brief idea about "what is Natural language processing". He discussed about the available natural language processing systems (START system) and its disadvantages. After that he briefly explained some of the challenges in NLP. Further he covered the topics like complexity of Hindi language, huge vocabulary of hindi language, wrong interpretation by Google etc. He talked about Sophia, first humanoid robot and played a video of Sophia's interview. After that finally he explained his research methodology. There

were 3 steps in the proposed method which are - Collection of data in confusion matrix, Generation of candidate list and Viterbi algorithm for finding most appropriate candidate word. Each and every step was explained nicely. Then he introduced his own NLP system "UTTAM" and explained how "UTTAM" resolves all the ambiguities for NLP. He also showed the java code of UTTAM and showed the working of UTTAM live.

KEYNOTE SESSION-4: On 2nd August 2019, the second day of the National Conference held on 'Emerging Trends in Information Technology', the keynote speaker Prof R. K. Agrawal from the School of Computer & Systems Sciences, Jawaharlal Nehru University, addressed the audience and apprised all about the "Deep Learning Models And its challenges". He began by explaining the need for practical learning and learning through examples. It was followed by an explanation of the key concept of Machine Learning and its various applications like face recognition, fingerprint recognition, and self-driving car. Along with that, he discussed the typical goals of machine learning. Then he proceeded further and illustrated the types of machine learning: supervised learning(task-driven), unsupervised learning(data-driven), reinforcement(learn from mistakes). He also introduced the audience with various algorithms that are used in machine learning like nearest neighbour algorithm, K-Nearest neighbour algorithm, algorithm to find a decision boundary. The next section of his address was dedicated to the explanation of neural network, gradient descent learning rule, and multilayer perceptron(MLP). While concluding, he explained the idea behind deep learning, how it is different from machine learning, and the challenges of deep learning.

KEYNOTE SESSION-5: The keynote speaker Dr. Suraiya Jabin, Associate Professor, Department of Computer Science, Jamia Millia Islamia(central university) addressed the audience on the Topic "Artificial intelligence techniques and its applications" in this session. She began by explaining what is AI which was followed by explanation of history of artificial intelligence ,the Turing test, notions of artificial intelligence, different artificial intelligence techniques etc. Along with that, she told about AI based fiction such as Doraemon, Shinchan etc. She gave various examples of supervised learning such as EMAIL, Audio, Ad etc. she also introduced the audience with deep learning, job and AI ,DIGI YATRA. In further section she illustrated the difference between computer neurons and human neurons, neural nets for face recognition. While concluding, she told about various articles on Artificial intelligence such as – MIT's pic2 recipe app, 'Watch, Attend and Spell', and the challenges of Artificial learning.

KEYNOTE SESSION-6 : The keynote speaker Dr. Akshi Kumar from DTU addressed the audience on the topic "Social media mining for sentiments : Techniques and trends" in this session. Social media mining is the process of obtaining big data from user generated content on social media sites like facebook, twitter etc. Social media mining is done to extract patterns, form conclusions about users, and act upon the information often for the purpose of advertising to users or conducting research. It uses a range of basic concepts from computer science, data mining, machine learning and statistics. Social media mining is used across several industries including business development, social science research, health services and educational purposes. Prior to social media analysis web mining is done to gather the information from unstructured and irrelevant data. After gathering the relevant information

social media analysis is done by the social media analytics to conclude the information and gathering the knowledge about the data. Social media analysis also includes sentiment analysis. Sentiment analysis is the computation study of people's opinion, attitudes, emotion towards an entity. Sentiment analysis is a major part of social media mining. It is because social media users often relay positive or negative or neutral sentiments in their posts. Sentiment analysis provides important social information about users emotions on specific topics. There are three techniques used in sentiment analysis lexicon based, machine learning and the hybrid of these two. There are number of challenges in sentiment analysis. This includes negation handling, unstructured data, slangs, abbreviation, noise, co-reference resolution , ambiguous words, colloquial words, mashup language etc. The solution to these problems is the soft computing. Soft computing encompasses a set of computational techniques and algorithms that are used to deal with complex systems. It uses a number of techniques which includes machine learning, neural networks, probabilistic reasoning, evolutionary computing and fuzzy logic. Among these machine learning is the most used technique for soft computing.

KEYNOTE SESSION-7: The seventh keynote session of National Conference on Emerging Trends in Information and Technology (NCETIT-2019) was held on 2nd August, 2019. Keynote speaker of the session was Dr. Hema Banati, Associate Professor of Dyal Singh College, University of Delhi. The title of the talk was “Nature Inspired Techniques and Their Applications”. She began with discussing about how nature influences the invention of various applications, such as the Japanese bullet train whose inspiration was a kingfisher. Then, she briefed about advantages of these technologies, why nature and this is correlated, problem solving strategy using technology and different kinds of algorithms applied for solving such problems, and also talked about how Word of Mouth (WOM) and E-WOM affects the marketing process. The chief module of her presentation was nature inspired outlook for the market, that focussed mainly on viral marketing. The prime target for viral marketing these days is social networking sites that take into account general people’s opinion to transfer WOM through internet, further leading to widespread promotion of products. In her presentation, the targeted users (users of high network values) were referred to as seeds. The technique of fireflies, proposed by Xin-She Yang, was used. She developed a three-tier structure whose first step was market analysis, in which the best feature for a particular type of audience was selected by applying evolutionary algorithm. This was followed by market segmentation in which the market of potential customers is divided into groups based on different characteristics. The final step was targeted product promotion. The products were marketed and sold after considering the preferences of the users. She concluded by saying that nature plays a great role in the development of a number of methods and how it is vital for efficient marketing. She also added that she is looking forward to making more advances in this field of research. Overall, the session was significantly knowledgeable, with every detail explained remarkably.