Dr. Deepak Garg, Ph.D.

TOP LEVEL PROFESSIONAL, ACADEMICIAN, RESEARCHER AND CONSULTANT
STRATEGIC PLANNING | DATA SCIENCE AND MACHINE LEARNING | INTERNATIONAL FUNDING

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Executive Profile

Extensive experience in **Higher Education, Change Management, Administration, Research Project Management, Deep Learning and Data Analytics** with **nearly 20 years of career success** in building & enhancing quality of innovation and learning in University education and to be worthy of international accreditations. Key Figure in Indian Academia and Startups with his IEEE Leadership and Social Connect.

Excellence in driving the development & implementation of objectives for Industry Scale Consultancy and implementation of projects, curriculum and instructional evaluation; hiring quality faculty and generating International Grants, establishing Industrial and Foreign collaborations. **Impeccable record** of delivering over 200 talks, organizing international workshops on futuristic skills related to **Machine Learning and Data Science** in collaboration with professional organizations as well as workshops on Leadership for Indian Engineering institutions.

Possess an innate flair of executing research projects in the field of Data Science, Data Analytics, Deep Learning, Advance Data Structures and Algorithms, MOOCs, Transformations in higher education with quality perspective.

Logical thinker and strong communicator with noted success of 20 SCI (Web of Science) publications and 300 million INR funding in Grants He has 580 citation count and h-index of 14 in Google Scholar. Credit of having 40 Scopus papers and in total 100+ publications including IEEE Transactions, Springer and Elsevier Journals. Worked in national and international committees on NBA, NAAC accreditation and is only ABET PEV from India till now. Known as algorithm gurus in India and created a free resource as algorithmguru.com. He is an active Blogger with Times of India with nickname as "Breaking Shackles". His website www.gdeepak.com gives more glimpses on his personality.

Education & Credentials

- Ph.D. from Thapar University in 2006 with 9.11 CGPA
- B.Tech. (Computer Science & Engineering) from PTU in 1997 with 75%

Career Timeline

IBM, USA and Bangalore as Software Engineer

1998-1999

2000-2016

Thapar University, Patiala as Professor and Chair, Computer Engineering

Bennett University, Greater Noida as Director, AI Research; Professor and Chair, Computer Engineering

2016 till date

Key Skills

Strategic Planning & Leadership	Research Project Management
Change Manager	Curriculum Planning, Design, Development
Industry & Public Relations	Programs Management, Accreditation
Human Skillset for AI Environments	Research Consultancy
Strategic Alliances & Tie-ups	Team Building & Leadership

Soft Skills

Leader
Communicator
Coordinator
Analytical

Key Skills

Professional Experience

July 2016 – till date: Bennett University, Greater Noida as Director- NVIDIA, Bennett Center of Research on AI; Director leadingindia.ai; Professor and Chair, Computer Science Engineering
August 2000 – June 2016: Thapar University, Patiala as Professor and Chair, Computer Science and Engineering

Key Result Areas:
- Strategizing, planning, motivating and executing outcome-based research plan in the niche technologies and latest innovations in the field of Deep Learning and Data Science
- Conceptualizing & developing pedagogy, teaching learning strategy, graduate profiling for the students, undertaking validation & execution of courses as well as engaging in learning evaluation and assessing effectiveness
- Implementing operational plans for ensuring the smooth running of the organization
- Leading the organization for national and International accreditations, rankings and audits. Bringing on board Industrial and Institutional collaborations
- Setting educational standards & goals, developing educational quality management systems; establishing policies and procedures to conduct the same, organizing International Events, conferences, workshops and symposia

Highlights:
At Bennett University
- Consulting in enabling industries to implement multidisciplinary applications of Machine Intelligence for 'smart' living and better healthcare. Our Consulting arm prefer applications which help organizations to transform themselves for the new age customers. It includes optimization, analysis and intelligence enabled products and algorithms. Our work primarily derives from Artificial Intelligence, Data Science, Machine Learning, and Natural Language Processing.
- Focused on solving challenging problems in the domain of Healthcare, Bioinformatics, Cyber Physical Systems, Internet of Things with the help of advanced algorithms for Machine Learning and Deep Learning.
- Collaborated with Georgia-Tech, USA; NVIDIA, Dell-EMC, IBM, Amazon that resulted in faculty exchange, student exchange and research collaborations
- Leading the department to make it a world class learning and research unit for Computing skills, innovation and knowledge creation. Submitted projects of around 50 million INR values to different agencies.
- Bringing rich interdisciplinarity in the research, consultancy and project collaboration
- Built a high-quality team of faculty and professionals
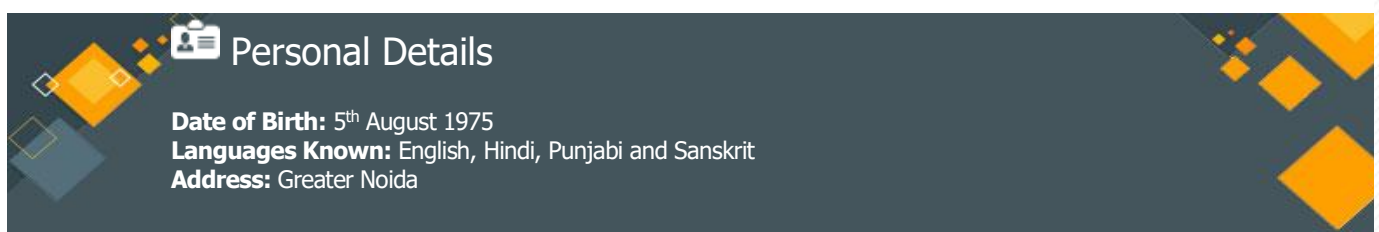
At Thapar University
- Established working relationships with many industries as industry coordinator and resulted in working with IBM, Google, Microsoft, CISCO, Dell-EMC, NVIDIA, TCS, Infosys, Wipro and others. Relationship as well as govt. R&D organizations like CDAC, DST, CSIR and CSIO
- Partnered with Trinity College, Dublin for an overall contemporizing program with Thapar University, resulting in mentorship programs, review visits, dual degrees, capstone knowledge transfer and setting centre for academic excellence
- Prepared the department for NBA, NAAC, ABET accreditation and different ranking agencies
- Generated around 50 million worth of Project funding and grants from different granting organizations
- Established Annual IEEE Conferences on International Advance Computing (IACC 2009 onwards) and MOOCs, Innovation, Technology in Education (MITE 2012 onwards)

Major Projects:
- 20,00,00,000 INR Initiative for "Deep Learning and AI Skilling and Research" by Royal Academy of Engineering, NVIDIA, AWS and Bennett University and a consortium of 1000 institutions as collaborators, Zonal Leads and Basic partners
- 2,00,00,000 INR spent on Machine Learning and Deep Learning with focus on consultancy, Research and Corporate training on niche technologies of RNNs, CNNs and ANNs
- 1,00,00,000 INR Project on Innovative Research in Pedagogy for Mini-MOOCs Blended with Instruction Strategies to Enhance Quality of Higher Education" funded by Royal Society of Engg, UK; partnered 120 Indian institutions for MOOC initiative
- Tox2020: Toxicity Prediction of Pre- clinical Trial Drug using Physicochemical Properties and Machine Learning Approaches" from DST, GOI with a value of 2587248; managed heavy use of pattern analytics and data science
- Working on unusual activity detection, image quality analysis, fraud detection in online advertising, text to video conversion with storytelling, detection of specific disease patterns in medical images, low cost devices for epilepsy fit trigger, toxicity prediction of pre-clinical trial drug using physicochemical properties, analysis of learner behavior for online MOOCs, news summarization, intelligent detection of biomolecular spatiotemporal modifications for disease aetiology and epidemiology

Previous Experience

January 1998 – March 1999: IBM, USA and Bangalore as Software Engineer

🪪 Personal Details

Date of Birth: 5th August 1975
Languages Known: English, Hindi, Punjabi and Sanskrit
Address: Greater Noida

Refer annexure for Professional Affiliations, Academic Projects, Publications, Papers, Presented, Articles, Conferences, Workshops / Short Term Courses / Faculty Enablement Programs

ANNEXURE

Project Profile

Abstractive News Summarization

People depend on difference sources of information and news to stay informed in everyday life. They often do not have much time to go through an entire news article to understand the content, yet they want to know all the important elements the article. Hence there is a need of summarizing lengthy text into concise, understandable summaries that helps the people to minimize the reading time.

To ease this news abstraction process, traditional Natural Language Processing based approaches exploit statistical information to extract important text snippets, compile and present them as summary to the users. This form of extractive summarization often fails to compress lengthy, detailed text well rather only picks up key words or phrases from the original text. Still, there is a requirement for an efficient abstractive summarization approach that can concise a news article and paraphrase the content into an understandable, grammatically proper text summary.

Recently, this abstractive summarization is treated as a natural language generation problem and solved using sequential modeling deep learning approaches where the sequence-to-sequence learning is accomplished with training of large text datasets. Few RNN based approaches have been used for generating headlines for a news story. However, news summarization from paragraphs of news story is considered more complex than headline generation.

In this project, our primary scope is to develop a deep learning solution by experimenting different generative sequential models such as LSTM, GRU, bidirectional RNNs, encoder-decoder networks with and without attention mechanism on large scale news dataset. This effort is trying to train the generative deep network and a new language model (or reuse existing models and go for transfer learning) for this purpose.

Cyber Security Solution for Online Advertisement Frauds

Online Advertisement is a form of advertisement that uses internet pages to deliver the messages to the consumers for content promotion. Now we have almost 20 billion users over the internet, making Internet the biggest platform for advertisement. And today most of the sellers are using digital media for advertisement. As the need of digital platform increases, the types of attacks are being advanced day by day that causes many problems in digital marketing fields in terms of reputation as well as revenue. The most prominent frauds that need to be taken care in digital advertisement are Ad frauds and more particularly click frauds. Click Fraud is a method of generating illegitimate clicks on digital ads by making repeating clicks, with the intention of generating revenue for the host website and draining the revenue from the advertiser. From 2014 to 2017 itself, the impact of click fraud has led to high revenue losses in the digital marketing sector. More needs to be done to detect these attacks efficiently and make the online advertisement realm free from these kinds of frauds.

In this project, our goal is to mine the logs of click patterns and develop machine learning models for detecting click frauds. The available logs from the customer are used to generate a labelled dataset (using the existing rule-set), which is the starting point for training the models. This project will leverage past research in anomaly detection as well as in supervised and unsupervised learning. A user's click patterns are mined, keeping in view the current clicks as well as the history of the user. The users which falls under the suspicious category (based on a set of preliminary parameters), their click patterns are subjected to additional analysis.

Automated Generation of Videos from News Stories

Recent advancements in internet, media capturing, and mobile technologies have let fast growing News industries to produce and publish News stories rapidly. In recent days News industry is trying lot to make their news stories attractive and more engaging to their readers. Youngsters these days often do not have much time to go through an entire news article to understand the content, yet they want to know all the important elements the article.

Recent surveys suggest that Millennials and other similar age group of people prefer news stories as videos over news as text. However manual generation of videos for each news article is considered costly and laborious. Hence there is a requirement for news video generation system that can create interesting, engaging, concise and high-quality news videos from text news stories with little or no human intervention.

Recent startup Wibbitz assists publishers in converting news stories into videos with the help of semi-automated content analysis and manual editing with minimal production time. This project is developing an end-to-end automated solution for generating videos from news articles. The system has different NLP based components for automated news content analysis. Detection of key phrases from the news article are done using NLP based or Deep learning solutions. Named entities in a news story such as person, time, place, brand etc. can be automatically detected using NER for highlighting them in videos.

Intelligent Detection of Biomolecular Spatiotemporal Modifications for Disease Aetiology and Epidemiology

Even though human health is the most researched subject in the human history, still we are far away from achieving the objectives of a healthy society. Due to the changes in the eating patterns, changes in the society due to different technologies, changes in weather and changes in the climate; there are to new challenges in maintaining human health. Researchers are still not successful in dealing with outstanding issues like ageing, cancer, Alzheimer, dermatomyositis etc.

Epigenetics is control in gene expression due to modification on biomarkers on genes but not the genetic code itself. There are many diseases for which the understanding of the causation of the disease is also partial and this throws open a possibility of working in this area. We also need to understand the causation, distribution, and possible control of diseases and other factors relating to health. Use of publicly available experimentally detected biomarkers to point out the causation of diseases turns out to be valuable in prediction, prevention, and intervention of diseases. Due to the vast variety of biomarkers and their distribution over a diverse range of biomolecules, however, tracking, underscoring, correlating, and curating those in an analog manner is a herculean task. Therefore, the possible connection of the biomarkers with disease remains elusive.

Our team is working to develop tools, algorithms, frameworks and architecture to make application and dashboard for intelligent detection of biomolecular spatiotemporal modifications for disease Aetiology and Epidemiology. The world is moving one step ahead and trying to integrate the use of artificial intelligence into data science to move towards deep learning perspective of the hidden patterns.

Low cost devices for Epilepsy Fit trigger

Nearly 20 million people in the India and 65 million people worldwide suffer with epilepsy, a neurological condition which affects the nervous system and causes seizures (Fits). One in 26 people develop epilepsy at some point in their lifetime, with 200,000 new cases annually in the India. Nearly 80% of the people with epilepsy live in low and middle-income countries and three

quarters of these individuals do not get the treatment they need. Among those living with epilepsy, nearly one-third have ongoing seizures despite existing therapies.

The major objective of the project is to design and develop a personalized wearable low-cost device that detect epilepsy fits before its occurrence. Initially, a sensor-based device is trained for the patterns of fits in patient. After training the device it can detect fits before its occurrence. For epilepsy, neuro signals (i.e. brain signals) are used to detect fits and it is found to be costly and inefficient. This is the novel idea which combines the use of sensors and computational intelligence approaches (i.e. machine learning techniques) together.

◉ **Toxicity Prediction of pre-clinical trial drug using Physicochemical Properties**

Following are the problems intended to be addressed:

(i) Fast and accurate method for screening the toxicity of a pre-clinical drug: More than 30 percent of promising pharmaceuticals have failed in human clinical trials because they are determined to be toxic despite promising pre-clinical studies in animal models. Developing a fast and accurate method for screening the toxicity of a pre-clinical drug using proposed method, resulting in saving of time and money.

(ii) In-stream Big data processing for drug discovery: Our focus in this project is to identify efficient data structures and algorithms which help in extracting the required features from the data streams and provide required information to research community or pharma companies to screen the drug.

(iii) Speeding up the discovery of Novel Drug: Modern drug discovery involves the identification of screening hits, medicinal chemistry and optimization of those hits to increase the affinity, selectivity (to reduce the potential of side effects), efficacy/potency, metabolic stability (to increase the half-life), and oral bioavailability. Once a compound that fulfils all these requirements has been identified, it begins the process of drug development prior to clinical trials.

◉ **Unusual Activity Detection**

We are developing an application to automatically detect unusual activities. Generally, humans follow a sequence in their actions. Based upon these sequences of activities, we classify them into usual and unusual activities. A lot of human resources are required to monitor the vast number of surveillance cameras installed in public and private places. So, it is highly recommended to have an automatic algorithm (System) which can detect unusual activities and trigger action. The unusual activity detection is extremely useful in several applications such as, remote monitoring of elderly persons, jail inmates, patients in hospitals, care-centres for differently abled etc.

The human detector performs fairly in detecting both full human or upper body in most of the normal circumstances. However, accuracy drops sometimes in visuals with different lighting conditions, humans with different outfits, occlusion, background cluttering with couches etc. Also, sometimes fewer detections are missed when there is an occlusion between two people in video. The key points detection for pose estimation works well with high resolution frames containing human detection boxes while the detection fails in few cases where video has low resolution frames. The activity recognition is also fairly performed in the real test data where simple activities such as walking, sitting, drinking, falling were easily identified. In addition, unusual activities are easily detected using the detection of individual activities such as falling where the long-term activity chains were also analyzed for unusual nature in daily activities.

◉ **Interestingness of people for products and processes involved in online interaction**

Futuristic Project revolves around the notion of statistically quantifying the supposedly unquantifiable mental property of interest. This is done to elevate a machine from a mere mechanical device to a full-fledged system capable of behaving intelligently like a human. Furthermore, it has often been speculated that interest can be felt and not quantified. It is, after all, a human emotion. Therefore, can a machine feel or rather understand the emotion of interest? Is it even imaginable let alone possible? The question that we have raised here not only challenges the current state-of-the-art, but it also raises additional issues for AI. Despite the significant nature of the problem, we are working to devise a method that can estimate a person's interest, the future applications can be truly tremendous. For instance, computational systems could then monitor the interestingness of people toward online platforms (e.g. Facebook, Twitter etc.), employers could administer the interest of their employees in commercial projects. It is that the application of such a method could, at times, outperform our current imagination.

Professional Affiliations

◉ Member, Education Activity Board IEEE Committee on Global Accreditation Activities from January 2016 to December 2016
◉ Member, ABET criteria review committee of Computing Accreditation Commission
◉ Member, Board of Governors IEEE Education Society from January 2015 to December 2016
◉ Chair, IEEE Computer Society Chapter, India Council from January 2012 December 2016
◉ Chair, IEEE Education Society, India Council from January 2013 to December 2016
◉ Coordinator, NBA Nodal Center, Thapar University from April 2013-2015
◉ Vice President, IEEE Education Society Chapter, India Council from January 2012 to January 2013
◉ Chair-Elect, IEEE Education Society Chapter, India Council from January 2012 to January 2013
◉ Chair, ACM North India SIGACT Chapter from January 2011 January 2016
◉ Senior Member, IEEE, USA Since December 2007 and Member from January 2003
◉ Member ExCom, IEEE Delhi Section from May 2008 to February 2015
◉ Secretary, IEEE Computer Society, Delhi Section from May 2009 to May 2013
◉ Counsellor, IEEE student chapter at Thapar University from January 2008
◉ Senior Member of ACM (Association of Computing Machinery), UK from January 2006
◉ Life Member, Computer Society of India (CSI) from last 5 years MN 00119893
◉ Life Member, Indian Society of Technical Education ISTE, New Delhi LM 31369 from August 2001
◉ Life Member, Inst. of Electronics and Telecommunications Engineers (IETE) M-183810 From June 2006
◉ Life Member, Indian Science Congress, Association Kolkata (ISCA) L12327 from April 2007
◉ Member, British Computer Society (BCS) 990133533 From March 2007
◉ Member, IEEE Computational Intelligence Society, USA
◉ Senate Member (2005) Thapar University, Patiala
◉ Member, Post Graduate Committee (2006) at Thapar University, Patiala
◉ Member, Distance Education Council, PTU from April 2009
◉ President, Creative Computer Society at Thapar University, Patiala from June 2006 to June 2009
◉ Ex-Member International Society for Computational Biology (ISCB), USA
◉ Member, IEEE Delhi Section Committee on Membership Development, 2009-10

- Member, IEEE Delhi Section Committee on Public Relation and Publication, 2009-10
- Member, National Distinguished Lecture Series for IEEE Specialized talks from 2008
- Member, IEEE Delhi Section Committee on Technical and Professional Activities, 2009-10
- Life Member, Yogada Satsanga Society, Ranchi L-51727 from July 2001
- Life Member, Sewa Bharti, Punjab from June 2003

Academic Projects

- **Title:** Data Science for Innovative Research in Pedagogy for Mini-MOOCs Blended with Instruction Strategies to Enhance Quality of Higher Education
- **Sponsoring Organization**: Royal Academy of Engineering, UK
- **Year of Funding:** 2016
- **Amount of Grant (In Lacs):** 100 Lacs

- **Title:** Tox2020 -Toxicity Prediction of Pre-clinical Trial Drug using Physicochemical Properties & Machine Learning Approaches
- **Sponsoring Organization**: DST
- **Year of Funding:** 2016
- **Amount of Grant (In Lacs):** 24 Lacs

- **Title:** Pattern Discovery for DNA sequences
- **Sponsoring Organization**: AICTE
- **Year of Funding:** 2006
- **Amount of Grant (In Lacs):** 11 Lacs

Students Research

- **Doctoral Degrees (Ph.D.)**
  - Vaishali Mehta: Improved Approximation Algorithms for facility Location Problem, 2018
  - Monika Mangla: Efficient Geometric Algorithms for Resource Location Models, 2018
  - Sunita: Improved Data Structure for Dynamic and Massive Data, 2018
  - Kuldeep Sharma: Efficient Randomized Algorithm   for Graph Theoretic Applications, 2016
  - Seema Verma: Improvement in Performance of RSA Cryptosystem, 2015
  - Tulika: Developing Event Based Middleware for Information Dissemination in Vehicular Ad hoc Networks (With Prof. M Gore, MNNIT), 2014
  - Manoj Manuja: Semantic Web Mining of Unstructured Data, 2014
  - Sudhanshu Gupta: Query Estimation in data streams using Micro-Clustering, 2014
  - Rattan Rana: Design and Simulation of Algorithm for K-Center Problem, 2014
  - Srabanti Bhunia: Improvement of Algorithms for Gene Prediction, 2013
  - Bhawna Mallick: Algorithm for Incremental Mining of Sequential Patterns (with Prof P S Grover, GTBI), 2013
  - MV Padmavati: Manifestation of Variants of SNP systems & Petrinets (with Prof Kamla Krithivasan, IIT Madras), 2012
  - Shivani Goel: Designing A Framework for Efficient Enterprise Resource Planning (with Prof R Kiran, TU Patiala), 2012
- **Masters Degrees**
  - Anshul Chandel: Comparison and Analysis of RDF data using SPARQL, HIVE, PIG in Hadoop, 2015-16
  - Dhanmeet Kaur: Variable Bid Fee: An Online Auction Shill Bidding Prevention Methodology, 2014-15
  - Sahil Sharma: Predicting Employability from User Personality using Ensemble Modelling, 2014-15
  - Priya: A Hybrid Approach to improve the Anomaly Detection Rate Using Data Mining Techniques, 2014-15
  - Ashish: Profile Injection Attack Detection in Recommender System, 2014-15
  - Anika: Applying Data Mining for Job Recommendations by exploring job preferences, 2013-14
  - Ankush: Progressive Alignment using shortest common super sequence, 2013-14
  - Harsham: Bootstrap Sequential Projection Multikernel Locality Sensitive Hashing, 2013-14
  - Anu Dahiya: Efficient Pattern Matching with Flexible Wild-Card Gaps and One-Off Constraints, 2013-14
  - Sachin Bagga: Mouldable Load Scheduling using demand adjustable policies, 2013-14
  - Haresh: Routing Table Optimization using t-spanner Technique, 2012-13
  - Vikram Singla: Finding Nearest Location   with Open Box Query using Geohashing and MapReduce, 2012-13
  - Ravi Agarwal: Nearest Facility Location for Multiple Customers using Voronoi Diagram, 2012-13
  - Deepika Sharma: Improved Stemming approach used for Text Processing in Information Retrieval System, 2011-12
  - Parth Patel: Perfect Hashing Base R-tree for Multiple Queries, 2011-12
  - Megha Tyagi: Efficient method for Deadlock Detection and Avoidance using Two Way Search, 2011-12
  - Aastha: Web page content block partitioning for focused crawling, 2011-12
  - Bharat Gupta: A Better Approach to Mine Frequent Item Sets Using Apriori AND FP-Tree Approach, 2010-11
  - Ritika: Cache aware and cache oblivious algorithms, 2010-11
  - Sanchika Gupta: A frequent pattern based approach to information retrieval, 2010-11
  - Ajeet Singh: Improved Exponential Tree Integer Sorting Algorithm Using Node Growth, 2010-11
  - Tamanna: Improved Randomized Signature Sort: Implementation & Performance Analysis, 2010-11
  - Hemant Sharma: Graph Based Approaches Used in Association Rule Mining, 2009-10
  - Jitesh Tripathi: Algorithm for Detection of Hot Spots of Traffic Through Analysis of GPS Data, 2009-10
  - G Prasad Rao: Random Number Generation and its Better Techniques, 2009-10
  - G Balakrishna: Bi-objective Uncapacitated   Multi   Facility   Location Problem (with Dr. Mahesh Sharma), 2009-10
  - Chintan Jain: An Approach to efficient Network Flow Algorithm for solving Maximum Flow Problem, 2009-10
  - Kuldeep Sharma: Complexity Analysis of Algorithms involving heterogeneous systems, 2008-09
  - Aditya Dev Mishra: Selection of Best Sorting Algorithm for a problem, 2008-09
  - Narendhar Maaroju: Choosing Best Heuristics for NP Problems, 2008-09

- o KVR Kumar: Efficient Algorithms for Vertex Cover Problems, 2008-09
- o Mauli Gulati: Reducing IPC Time on Local Host by Implementing Seamless Socket Interface, 2008-09
- o Mahima Singh: Finding Best Hashing Strategies and Hashing Functions (with Mr. Ravinder Kumar), 2008-09
- o Shailendra Kumar: Choosing Best Algorithm Design Strategies for given Problem (with Mr. Ravinder Kumar), 2008-09
- o Ratinder Kaur: Improvement of Parameter in Basic Local Alignment Search Tool (BLAST), 2006-07

Publications

- Anika, **Deepak Garg** and Parteek Bhatia Analysis of Students' Ratings of Teaching Quality to Understand the Role of Gender and Socio-economic Diversity in Higher Education, IEEE Transactions on Education, 2018
- Sunita Bajaj, **Deepak Garg** Extended Suffix Array Construction using Lyndon Factors SADH-D-17-00614R1, Accepted in Sadhna Journal by Springer, SCI indexed, 2018
- Dilbag Singh, **Deepak Garg**, Husanbir Singh Pannu Efficient Landsat image fusion using fuzzy and stationery discrete wavelet transform, Imaging Science Journal, Taylor Francis, SCI, http://dx.doi.org/10.1080/13682199.2017.1289629, March 2017
- Sunita Parashar**, Deepak Garg** A Retroactive Approach for Dynamic Shortest Path Problem, National Academy Science Letters Number SCLE-D-15-00515R1 SCI, accepted Mar 2017
- Vaishali Mehta, **Deepak Garg** Approximation algorithm for resource allocation problems with time dependent penalties, International Journal of Foundations of Computer Science, World Scientific SCI, IJFCS-D-15-00168R2 accepted Feb 2017
- Monika Mangla, **Deepak Garg** converging solution for p-Center in non-convex regions, Turkish Journal of Electrical Engineering & Computer Sciences, Faith University, Turkey, SCI, ELK-1601-186_manuscript_2 2016 accepted Sep 2016 Impact Factor: 0.568
- Manoj Manuja, **Deepak Garg** Performance and Accuracy Analysis of Semantic Kernel Functions, Program-Electronic Library and Information Systems, Emerald, SCI, accepted Sep 2015 Impact Factor: 0.651
- Seema Verma, **Deepak Garg** Improvement in Rebalanced CRT RSA, International Arab Journal of Information Technology, ID-5492, Volume 12 Number 6 November 2015 SCI Journal, Impact Factor: 0.39
- Sudhanshu Gupta, **Deepak Garg** Selectivity Estimation of range queries in Data Streams using Micro-clustering, International Arab Journal of Information Technology (IAJIT), Volume 13 Number 5 September 2016 ID-5856, Impact Factor: 0.39
- Manoj Manuja, **Deepak Garg** Intelligent text classification system based on self- administered ontology, Turkish Journal Of Electrical Engineering & Computer Sciences, Faith University, Turkey, 10.3906/elk-1305-112 Vol. 23, Issue 2015,pp. 1393-1404, Impact Factor: 0.568, SCI
- Srabanti Maji and **Deepak Garg** Hybrid Approach using SVM and MM2 in Splice Site Junction Identification, Current Bioinformatics Vol 9, No. 1,pp. 76-85, Bentham Science, 2014, Impact Factor: 2.017, SCI
- Tulika Pandey, **Deepak Garg**, MM Gore, Structured P2P Overlay of Mobile Brokers for Realizing Publish/Subscribe Communication in VANET, Scientific World Journal, Vol 2014, 12 pages, 2014. SCI, dx.doi.org/10.1155/2014/136365,Impact Factor: 1.7
- Bhawna Mallick, **Deepak Garg**, P S Grover, A Constraint Guided Progressive Sequential Mining Waterfall Model for CRM, CIT Journal of Computing and Information Technology, pp. 45-55 Vol 22 2014
- Bhawna Mallick, **Deepak Garg**, P S Grover, Constraint-Based Sequential Pattern Mining: A pattern growth algorithm incorporating compactness, length and monetary, International Arab Journal of Information Technology(IAJIT), ISSN 1683-3198, Vol 11, No.1, pp 33-42, January 2014, SCI Journal, Impact factor 0.39
- Srabanti Maji and **Deepak Garg** Hidden Markov Model for Splicing Junction Sites Identification in DNA Sequences, Current Bioinformatics, Vol 8 Issue 3 2013 pp. 369-379 SCI Journal, Bentham Science, Impact Factor: 2.017
- Rattan Rana, **Deepak Garg** Anticipatory Bound Selection Procedure (ABSP) for Vertex K-Center Problem, International Arab Journal of Information Technology (IAJIT),Vol 11 Num 5, September 2014, SCI Journal, Impact Factor: 0.39
- Bhawna Mallick, **Deepak Garg** P S Grover, Progressive CFM-Miner: An Algorithm to Mine CFM- Sequential Patterns from A Progressive Database, International Journal of Computational Intelligence Systems(IJCIS), SCI Journal Vol 6, No. 2 March, 2013, 209-222, Taylor Francis, Impact Factor: 1.47
- Srabanti Maji, **Deepak Garg** Progress in gene prediction: Principles and challenges, Current Bioinformatics, April 2013, Vol 8, No. 2 SCI Journal, Bentham Sciences, Impact Factor: 2.017
- Shivani Goel, Ravi Kiran, **Deepak Garg** Predictors of User Satisfaction in ERP in Technical Educational Institutions, Information, An International Interdisciplinary Journal, Published by International Information Institute, Tokyo, Japan pp.2885-2894 Vol16, No.5, May, 2013 SCI Journal
- Bhawna Mallick, **Deepak Garg**, P S Grover Fuzzy sequential pattern summarization with lattice structure, International Journal of Hybrid Technology, Science & Engineering, Research Support Society, Korea, ISSN 1738-9968, Vol 6, No. 3,pp.83-94 May 2013
- Bhawna Mallick, **Deepak Garg**, P S Grover CRM Customer Value based on Constrained Sequential Pattern Mining, International Journal of Computer Applications, ISSN 0975-8887, Vol 64, No. 9, pp. 21-29, February 2013, DOI 10.5120/10663-5434, FCS USA
- Bhawna Mallick, **Deepak Garg**, P S Grover Incremental Mining of Sequential Patterns: Progress and Challenges, Intelligent Data Analysis, Vol 17, No. 3, pp 507- 530, IOS Press, Impact Factor: 0.472
- Bhawna Mallick, **Deepak Garg**, P S Grover, CFM-PREFIXSPAN: A Pattern Growth Algorithm Incorporating Compactness And Monetary, International Journal of Innovative computing, Information and Control, Vol 8, No. 7(A), pp. 4509- 4520 July, 2012 SCI Journal
- Srabanti Maji, **Deepak Garg** Gene finding using Hidden Markov Model, Journal of Applied Sciences Asian network for Scientific Information, Vol 12 No 15 pp. 1518- 1525, 2012
- Nimisha Singla, Deepak Garg String Matching Algorithms and their Applicability in various Applications, International Journal of Soft Computing and Engineering, by BEIESP ISSN: 2231-2307, pp. 218-222 Vol I, Issue 6, January, 2012
- Venkata Padmavati Metta, Kamala Kritivasan, Deepak Garg Computability of Spiking Neural P Systems with Anti-Spikes, New Mathematics and Natural Computation Journal, by World Scientific Print ISSN: 1793-0057 Online ISSN: 1793- 7027 Vol 8 No. 3 pp. 283-295 2012

- Tulika Pandey, **Deepak Garg**, Manoj Madhav Gore, Publish/subscribe based information dissemination over VANET utilizing DHT, Frontiers of Computer Science, Springer Vol 6, Issue 6 pp 713-724, December, 2012 SCI Journal, Impact Factor: 0.298
- Shivani Goel, Ravi Kiran, **Deepak Garg** Vulnerability Management for an Enterprise Resource Planning System, International Journal of Computer Applications, by FCS USA pp. 19-22 Vol 53– No.4, September, 2012
- Megha Tyagi, **Deepak Garg** Comparative Analysis of dynamic graph techniques and data structure, International Journal of Computer Applications, Published by Foundation of Computer Science, New York, USA 45(5):41-46, May, 2012
- Parth Patel, **Deepak Garg** Comparison of Advance Tree Data Structures, International Journal of Computer Applications, by Foundation of Computer Science, New York, USA Vol 41 No.2 pp. 11-21 March, 2012
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- **Deepak Garg** Efficient Algorithm Design for Pattern Discovery in Bioinformatics Sequences Technical Supplement, Thapar University, Patiala, Punjab, India Vol 2 No 1- 3 pp.16 Jan-June-2007

Conferences

- **Conducted:**
  o International Conference on Transformations in Engineering Education by IUCEE at Bennett University, Greater Noida on January 04-06, 2018
  o IEEE International Conference on MOOC, Innovation and Technology in Education at BMS College of Engineering, Bangalore, Karnataka on October 27-28, 2017
  o International Conference on Machine Learning and Data Science by IEEE Computer Society at Bennett University, Greater Noida on 14-15 December 2017
  o IEEE 7th International Conference on Advanced Computing (IACC- 2017) at VNR Vignan Jyothi Institute of Engineering and Technology, Hyderabad on January 05-07, 2017
  o IEEE 4th International Conference on MOOC, Innovation and Technology in Education at Thiagrajar College of Engineering, Madurai, Tamil Nadu on December 09-10, 2016
  o IEEE 6th International Conference on Advance Computing (IACC-16) at SRKR Engineering College, Bhimavaram, Andhra Pradesh on February 27-28, 2016
  o IEEE 3rd International Conference in MOOC, Innovation and Technology in Education at ACET, Amritsar, Punjab on October 1-2, 2015
  o IEEE 5th International Conference on Advance Computing (IACC-15) at BMS Engineering College, Bengaluru, Karnataka on June 12-13, 2015
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  o IEEE 4th International Conference on Advance Computing (IACC-14) at ITM University, Gurgaon, Haryana on February 21-22, 2014
  o IEEE International Conference in MOOC, Innovation and Technology in Education at Poornima Group of Colleges, Jaipur, Rajasthan on December 20- 22, 2013
  o IEEE 3rd International Conference on Advance Computing (IACC-13) held at AKGEC, Ghaziabad, UP on February 22-23, 2013
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  o IEEE International Conference on Advanced Computing (IACC-09) held at Thapar University, Patiala, Punjab on March 06-07, 2009
  o National Conference on Technologies of 21st Century at Punjab University, Chandigarh on April 08-09, 2006
  o National Conference on Bioinformatics Computing held at Thapar University, Patiala, Punjab Sponsored by March 18-19, 2005

- **Delivered talks on:**
  o Invited talk on "MOOCs and Blended Learning" at ISTE (Indian Society for Technical Education) National Convention at Saint Gits College of Engineering, Kotttayam, Kerala on 27-28 January, 2018
  o Keynote Speaker at International Conference on Transformations in Engineering Education by IUCEE at Bennett University, Greater Noida on January 04-06, 2018
  o Keynote Speaker at 4th National Conference on Information Technology for Business Transformation 17(ITBT'17) at Ajay Kumar Garg Engineering College, Ghaziabad, Uttar Pradesh on February 17, 2017

- o Keynote Speaker at International Conference on Advances in Computational Techniques and Research Practices at Department of Computer Science & Engineering, Noida Institute of Engineering & Technology, Greater Noida on February 3-4, 2017
- o Keynote Speaker at IUCEE annual conference: 4th International Conference on transformations in Engineering Education (ICTIEEE'17) at Vardhaman College of Engineering, Hyderabad on January 08, 2017
- o Keynote Speaker in 7th IEEE International Conference on Advanced Computing at VNR Vignan Jyothi College of Engineering, Hyderabad on January 06-07, 2017
- o Inaugural Speaker in 2nd International Conference on Contemporary Computing and Informatics at Amity University, Noida, Uttar Pradesh on Dec 14- 17, 2016
- o Session Chair and Keynote Speaker in IEEE 4th International Conference on MOOC, Innovation and Technology in Education at Thiagrajar College of Engineering, Madurai, Tamil Nadu on December 09-10, 2016
- o Attended NVIDIA GTCx India 2016 on HPC, Deep Learning and Visualization at Renaissance, Mumbai, Maharashtra on December 06, 2016
- o Attended DELL-EMC Forum 2016 at J W Marriott, Gurugram, Haryana on October 18, 2016
- o Session Chair at 2nd IEEE International Conference on Next Generation Computing Technologies (NGCT-2016) at University of Petroleum & Energy Studies (UPES), Dehradun on October 14, 2016
- o Invited Speaker and Session Chair at RTIE-2016, 2nd National Conference on Recent Trends in Instrumentation and Electronics at Shaheed Rajguru College of Applied Sciences for Women (SRCASW) on October 05, 2016
- o Attended Google University Summit 2016 at Leela Ambience, Gurugram, India on September 29, 2016
- o Attended IBM Solutions Technical Conference (ISTC 2016) at Leela Palace, Bengaluru, India on September 28, 2016
- o Session Chair at International Conference on Sustainable Computing Techniques in Engineering, Science and Management (SCESM 2016) at Noida, Delhi-NCR, India on September 9-10, 2016
- o Keynote Speaker and Session Chair at 6th IEEE International Conference on Advanced Computing (IACC 2016) at SRKR Engineering College, Bhimavaram, Andhra Pradesh on February 27-28, 2016
- o Keynote Speaker in International Conference on Green Computing and Internet of Things at Galgotias Educational Institutions, Greater Noida, UP on October 08-10, 2015
- o Keynote Speaker in 3rd IEEE International Conference on MOOCs, Innovation and Technology in Education at Amritsar College of Engineering and Technology, Amritsar on October 01-02, 2015
- o Keynote Speaker in International Conference on Advance Research Applications in Engineering and Technology at Rungta Group of Colleges, Bhilai, Chhattisgarh on June 29-30, 2015
- o Keynote Speaker at International Conference on Communication, Information and Computing Technology (ICCICT-15) held at Global Institute of Management and Emerging Technologies, Amritsar, Punjab on May 12-13, 2015
- o Session Chair and Invited talk on Web Intelligence at National Conference on Upcoming Trends in Computer Science and Engineering at Giani Zail Singh Punjab Technical University Campus on December 9, 2014
- o Invited Talk on Sentiment Analysis through Web Applications at International Conference on Contemporary Computing and Informatics at Sri Jayachamarajendra College of Engineering, (SJCE) Mysore on November 28, 2014
- o Invited Talk at National Conference on Emerging Trends in Engineering Science and Technology (NCETEST-2014) at College of Engineering, Roorkee on March 29, 2014
- o Invited Talk and Session Chair at National Conference on Role of Information Technology in Transforming India at Desh Bhagat University, Mandi Gobindgarh, Punjab on March 15, 2014
- o Invited Talk on Web Intelligence at International Conference on Intelligent Computing Applications at Bharathiar University, Coimbatore on March 6, 2014
- o Session Chair at IEEE 4th International Conference on Advance Computing (IACC-14) at ITM University, Gurgaon on February 21-22, 2014
- o Keynote Speaker and Session Chair at IEEE International Conference on MOOC, Innovation and Technology in Education (MITE 2013) at Poornima Group of Colleges, Jaipur on December 21, 2013
- o Keynote Address on Various Aspects of MOOCs at IEEE International Conference on Management of Knowledge Economy (IMKE-2013) at Chitkara University, Punjab on December 19, 2013
- o Keynote Address on MOOCs in the current context at CII Conference on E- learning and E-publishing at Hotel Park Sheraton, Chennai on December 16, 2013
- o Invited Speaker on "Massive Open Online Courses" at National Conference on E-Learning and E-Learning Technologies at JNTU Hyderabad organized by CDAC on June 28-29, 2013
- o Keynote Address and Session Chair at IEEE International Advanced Computing Conference (IACC13) at AKGEC, Ghaziabad on February 22-23, 2013
- o Keynote Speaker on Big Data: Scope and challenges at Turing100-International Conference on Computing Sciences at Lovely Professional University, Phagwara, Punjab on September 14-15, 2012
- o Keynote Speaker and Session Chair at CSI 6th International Conference on Software Engineering at Indore on September 5-7, 2012
- o Session Chair and Invited Talk at National Conference on Modern Trends in Computer Science and Engineering (MTSCE-12) at Swami Vivekanand Institute of Engineering and Technology, Banur, Punjab on August 24, 2012
- o Keynote speaker and Session Chair in International Conference on Advances in Computing, Communication and Informatics (ICACC-2012) at Chennai on August 3-5, 2012
- o Keynote Speaker on Big Data at International Conference on Information Management in the Knowledge Economy (IMKE) at Chitkara Campus, Rajpura, Punjab on July 16, 2012
- o Session Chair at 2nd National Conference on Challenges in Emerging Computer Technologies, 2012 at Rayat Bahra Institute of Engineering & Bio- technology, Sahauran, Kharar, Punjab on May 16-17, 2012
- o Session Chair and Invited Speaker on Clustering in Data Mining at International Conference on Recent Advances and Future Trends in IT (iRAFIT-2012) conducted at Department of computer Science, Punjabi University, Patiala, Punjab on March 22, 2012
- o Session Chair and Invited Speaker on Various clustering methods at National Conference on Spectrum of Information Technology at School of Engineering and Technology, GL Bajaj Group of Institutions, Mathura, UP on March 18, 2012
- o Session Chair in the track of Use of IT in Chemical Engineering at National Conference on Advances in Chemical Engineering at Thapar University, Patiala, Punjab on February 27-28, 2011

- o Session Chair and Invited Talk on Futuristic Algorithms at UGC sponsored International Conference on Communication and Computing Technologies (ICCCT) at APJ College, Jalandhar, Punjab on February 25-26, 2011
- o Session Chair at International Conference on Advances in Computing, Communication Control-ACM, SIGART at Fr. Con. Rodrigues College of Engineering, Mumbai, Maharashtra on January 19-20, 2011
- o Session Chair and Invited Talk in the track of Algorithms in the IEEE International Conference on Advanced Computing (IACC-10) held at Thapar University, Patiala, Punjab on March 19-20, 2010
- o Session Chair at All India Seminar on Advance Computing at Doaba Institute of Engineering and Technology, Kharar, Punjab on January 22, 2010
- o Invited Talk on Technology for Distance Education: Issues and Directions at National Conference of Distance Education Council of Punjab Technical University held in Goa on September 2009
- o Session Chair and Invited Talk on Online Algorithms at National Conference on Advances in Computer Networks and IT (NCACNIT-2009) at Department of Computer Science and Engineering, Guru Jambeshwar University of Science & Technology, Hisar, Haryana on March 24-25, 2009
- o Presented a paper on Improvement Over Public Key Cryptographic Algorithms in the IEEE International Conference on Advanced Computing (IACC-09) held at Thapar University, Patiala, Punjab on March 6-7, 2009
- o Presented a paper on Choosing Best Hashing Strategies and Hash Functions in the IEEE International Conference on Advanced Computing (IACC-09) held at Thapar University, Patiala, Punjab on March 6-7, 2009
- o Presented a paper on Query Estimation in Data Streams in the IEEE International Conference on Advanced Computing (IACC-09) held at Thapar University, Patiala, Punjab on March 6-7, 2009
- o Session Chair and Invited Talk in the track of Advance Algorithms in the IEEE International Conference on Advanced Computing (IACC-09) held at Thapar University, Patiala, Punjab on March 6-7, 2009
- o Session Chair and Invited Talk on Why Algorithm Complexity at International Conference on Advanced Computing Technologies (ICACT) at Gokaraju Rangaraju Institute of Engineering and Technology, Hyderabad on December 26-27, 2008
- o Session Chair at International Conference on Advanced Computing & Communication Technologies at Asia-Pacific Institute of Information Technology, Panipat, Haryana held on November 3-4, 2007

Other Assignments

- ◉ Invited for talk on:
  - o Recent trends in technology at KCC Institute of Engineering and Technology on 29 January, 2018
  - o Research Directions on MOOC pedagogy framework at Amrita Vishwa Vidyapeetham, Amritapuri on 16th September
  - o Mini-MOOCs and the pedagogy framework at NIST, Berhampur on August 19, 2017
  - o MOOCs for enhancing the quality of education in India at Ed- Tech+ Conference at Park Hotel, Delhi on July 18, 2017
  - o Teacher Empowerment at Virtual Academy of Indo- Universal Consortium of Engineering Education on April 27, 2017
  - o Machine Learning in Cyber Crime at Faculty development program on "Computer Forensics and Cyber Crime" at Department of Computer Science and Engineering of Greater Noida Institute of Technology, Greater Noida on April 25, 2017
  - o Algorithm and Complexity Techniques at Nirma University, Ahmedabad on April 21, 2017
  - o Workshop on "IBM Watson and Deep Learning" at Computer Engineering Department Sharda University, Greater Noida on April 13, 2017
  - o MOOCs and Innovation in teaching at "Digitization for developing higher education: An International Workshop" by Department of Future Technologies, University of Turku at University of Turku, Finland on March 31, 2017
  - o Deep Learning and Web Intelligence at International Workshop in Big Data and Machine Learning (IWBDML-2017) at Chitanya Bharathi Institute of Technology, Hyderabad on March 28, 2017
  - o MOOC Life Cycle at National Workshop on "innovative research in pedagogy for Mini-MOOCs" for consortium members at Thapar University, Patiala on March 03, 2017
  - o IEEE Education Society Workshop on "Excellence in Engineering Education in a competitive environment" at Courtyard Marriott, Hyderabad, on February 26, 2017
  - o NAAC Sponsored National Seminar on "Role of ICT for Quality enhancement in Higher Education" at Kamrah Institute of Information Technology (KIIT), Gurugram on February 18, 2017
  - o "International Accreditation and International Ranking" at KL University, Vijayawada at NAAC Sponsored National Seminar on Quality Assurance in Higher Education Institutions on January 27, 2017
  - o "Crowdsourcing with Collaborative filtering" at Techgig.com, Times Internet Ltd. on January 12, 2017
  - o "Upcoming Engineers: How to excel in Life" at Maharaj Vijayaram Gajapathi Raj College of Engineering, Vijayanagaram Andhra Pradesh on January 05, 2017
  - o Web Intelligence at Winter School on Computational Intelligence in Pattern Recognition at National Institute of Technology, NIT, Kurukshetra on December 17, 2016
  - o Data Science: Applications and Research Directions at DST sponsored workshop on data science research at Hindustan College of Science and Technology, Mathura on December 16, 2016
  - o Assessment, Evaluation and Continuous Improvement at Thiagrajar College of Engineering, Madurai on November 05, 2016
  - o Crowdsourcing and its application at Manonmanian Sundarnar University on November 04, 2016
  - o Advanced Concepts in Data Structures and Applications at Manonmanian Sundarnar University on November 03, 2016
  - o Intelligence and Cognition at Chirala Engineering College, Chirala on October 17, 2016
  - o Approximation Algorithms at Hacker Earth Platform on October 13, 2016
  - o Innovative practices in teaching-learning for better student outcomes at Marwadi Education Foundation Group of Institutions, Rajkot on October 07, 2016
  - o Web Intelligence at IFTM University, Moradabad on September 23, 2016
  - o Web Intelligence at Hacker Earth Platform on September 14, 2016
  - o Data Analytics and Web Intelligence at U.I.E.T., Panjab University, Chandigarh One Week Faculty Development Programme on "Data Analytics and Big Data" from 23-28 May 2016 on May 27, 2016

- MOOCs and their role in higher education at Guru Nanak Dev Engineering College, Ludhiana in Faculty Development Program on " Computing Tools to Facilitate Multidisciplinary Research " from 16th May 2016 to 27th May, 2016on May 26, 2016
- Crowdsourcing at Chaitanya Bharti Institute of Technology (CBIT), Hyderabad on February 29, 2016
- Convergence at Annual Tech Fest of VNR Vignan Jyothi Institute of Engineering and Technology, Hyderabad on February 29, 2016
- Measurement of Outcomes and Assessment Techniques at SRKR Engineering College, Bhimavaram, Andhra Pradesh on February 26, 2016
- Crowdsourcing at Sant Longowal Institute of Engineering and Technology, Sangrur, Punjab in TEQIP-II Sponsored, Short Term Training Programme (STTP) on "Adhoc Networks and Cloud Computing" during January 13-17, 2016
- Understanding Complexity by Function and Time Chart at Rayat Institute of Engineering and Information Technology, Ropar, Punjab on August 28, 2015
- Organizing a World Class Conference at SRKR Engineering College, Bhimavaram, Andhra Pradesh on August 24, 2015
- Understanding the basics of Algorithm Complexity at BMS Engineering College, Bengaluru, Karnataka on August 17, 2015
- Look Phase of Web Intelligence Life Cycle at Durg Institute of Technology, Durg, Chhattisgarh on June 30, 2015
- MOOCs and their Implications at Maharaja Agarsain University, Barotiwala, Himachal Pradesh on February 9, 2015
- Web Intelligence at Chandigarh University, Gharuan, Punjab on February 3, 2015
- Latest trends in Technology related to Computer Science at Aryans Group of Colleges, Banur, Punjab on February 3, 2015
- How to prepare for NBA at NC College of Engineering, Israna, Panipat, Haryana on January 10, 2015
- Complexity Analysis of Algorithms at Refresher Course on Computer Science, Electronics, Information Technology & Engineering Applications at Academic Staff College, Guru Nanak Dev University, Amritsar, Punjab on December 10, 2014
- Creating Intelligent Web Applications at Refresher Course on Computer Science, Electronics, Information Technology & Engineering Applications at Academic Staff College, Guru Nanak Dev University, Amritsar, Punjab on December 10, 2014
- Data Structure Basics: Importance and Key Ideas at SR Group of Institutions, Lucknow, Uttar Pradesh on November 22, 2014
- Corruption Vigilance: Technology as an Enabler at Diesel Locomotive Works, Indian Railways, Patiala, Punjab on October 31, 2014
- Machine Learning and Web Intelligence at IEEE All Kerala Student Congress at College of Engineering, Trivandrum, Kerala on September 27, 2014
- Tips for Conference Organizers at BMS College of Engineering, Bengaluru, Karnataka on September 06, 2014
- Algorithm Complexity for Beginners at Rayat Bahra Institute of Engineering and Biotechnology, Mohali, Punjab on July 9, 2014
- Web Intelligence and Machine Learning at Manav Rachna College of Engineering, Faridabad, Haryana on July 5, 2014
- Machine Learning Algorithms and Data Analytics at International Workshop on Machine Learning and Data Analytics at Thapar University, Patiala on June 3-13, 2014
- Machine Learning and Web Intelligence at BMS College of Engineering, Bengaluru, Karnataka on April 04, 2014
- Sentiment Analysis and Web Intelligence at RV College of Engineering, Bengaluru, Karnataka on April 04, 2014
- Faculty Development Program on First two phases of Web Intelligence Applications at Computer Science Department, NC College of Engineering, Israna, Haryana on March 28, 2014
- Web Intelligence: Research perspective at Workshop on Recent Trends on Data Mining, Soft Computing and Nano Technology at JECRC, UDML Jaipur, Rajasthan on March 1, 2014
- Faculty Development Program on Computing and Communication Resources at Chandigarh Engineering College, Landran, Punjab on February 11, 2014
- Complexity of Algorithms and its importance in Modern Applications at Panipat Institute of Engineering and Technology, (PIET) Panipat, Haryana on November 16, 2013
- Swami Vivekananda and his Thoughts for Modern India at State College of Physical Education, Patiala as part of 150th Birth Celebrations of Swami Vivekananda on November 15, 2013
- Research and Innovation at ITS Engineering College, Greater Noida, Uttar Pradesh on November 8, 2013
- Big data and its Applications at Annual Focal 2013 at Maharaja Surajmal Institute of Technology, Janakpuri, New Delhi on November 9, 2013
- Web Intelligence at ITM University, Gurgaon, Haryana on November 5, 2013
- Algorithms Complexity and its Importance in Computer Science at Chandigarh University, Gharuan, Punjab for Udaan on October 24, 2013
- Design of Cryptography Algorithms at 5-day course on Design and Analysis of Secure Crypto Systems at Scientific Analysis Group of Defense Research Development Organization (DRDO), New Delhi from September 2-6, 2013
- Teachers as the Nation Builders on Teachers Day at Bhartiya Vidya Mandir (BVM) Udham Singh Nagar, Ludhiana, Punjab on September 4, 2013
- Preparation and Evaluation of NBA-SAR in 2013 Format for PG Programmes of Engineering Institutions at Dr. B R Ambedkar National Institute of Technology, NIT, Jalandhar, Punjab on August 17, 2013
- Faculty Development Program on Soft Computing and its Applications in Digital Image Processing at KC College of Engineering and Information Technology, Nawanshahr, Punjab on July 22-26, 2013
- Role of students in Higher Education System of our Country and Current Scenario for MCA students at National Institute of Technology, NIT, Trichy in Department of Computer Applications on July 18, 2013
- Search and Look Phase of Web Intelligence Cycle for PG and PhD Scholars in Computer Science and Engineering Department at National Institute of Technology, NIT, Trichy, Tamil Nadu on July 18, 2013
- Invited Jury Member for paper presentation in 5th DSCI best practices meet by DSCI (Data Security Council of India-NASSCOM) at Grand Hyatt, Chennai, Tamil Nadu on July 13, 2013
- Short Term Training Program on Recent Advancements and Research Directions in Software Engineering (RAISE 13) at NIT, Surathkal, Karnataka from June 10-14, 2013
- Big Data in context of Cloud Technology in International Workshop on Cloud Computing and its Applications at Gautam Buddha University, Greater Noida, Uttar Pradesh on February 17, 2013

- Steps for ME and PhD: Research Issues at Suresh Gyan Vihar University, Jaipur, Rajasthan on Feb 19, 2013
- Hadoop and its applications in Cloud Computing at Poornima Group of Institutions, Jaipur, Rajasthan on Feb 20, 2013
- Invited talk on Data structure and Algorithm: Applications in Industry in e- workshop on trends in Computer Vision KASCC, BIDAR on November 7, 2012
- Invited Talk on Data Mining; Introduction and techniques at Rayat-Bahra Institute of Engineering & Nano-Technology on September 19, 2012
- Invited talk on Research Directions for PG students at Patiala Institute of Engineering and Technology for Women, Patiala, Punjab on August 25, 2012
- Expert Talk on Trees and Recurrence Relations in Faculty Development Program on Advances in Computing and Communication Technology at Rayat Institute of Engineering and Information Technology, Ropar, Punjab on July 13, 20l2
- Invited Talk on How to excel in a PG/PhD Thesis at Ajay Kumar Garg Engineering College, AKGEC, Ghaziabad, Uttar Pradesh in May 2012
- Invited as key panelist in Business Continuity forum by IBM in Park Plaza, Ludhiana, Punjab on May 25, 2012
- Expert Talk on Data Mining and Clustering Algorithms at Rayat-Bahra Institute of Engineering and Bio-Technology, Kharar, Punjab on February 23, 2012
- Invited Talk on Bioinformatics- Status and Future Perspective at 22nd Refresher Course in Computer Application and IT at Academic Staff College, Punjabi University, Patiala on February 15, 2012
- Invited Talk on Importance of Algorithms and Their Complexity Analysis at 22nd Refresher Course in Computer Application and IT at Academic Staff College, Punjabi University, Patiala on February 15, 2012
- Invited Talk on Research Paradigms in Science and Management at Faculty Development Program organized by Guru Teg Bahadur Khalsa Institute of Engineering and Technology, Chhapianwali, Malout, Punjab on Jan 05, 2012
- Clustering algorithms in Data Mining at Poornima College of Engineering, Jaipur held under a workshop on Knowledge Mining on December 24, 2011
- Research and Innovations: How to move forward at IFTM University, Moradabad on Dec 14th, 2011
- Parallel Algorithms at KSR Institute of Engineering and Technology, Erode on December 2nd, 2011
- Higher Education Perspective in Emerging India at SKIT, Jaipur on November 26, 2011
- Linear Data Structures at Sachdeva Engineering College for Women, Gharuan held on September 29, 2011
- Problem Classification and heuristic algorithms at Patiala Institute of Engineering and Technology for Women, Patiala, Punjab on September 15, 2011
- Research perspective for PG Students at Baba Banda Singh Engineering College, (BBSEC) Fatehgarh Sahib, Punjab on September 15, 2011
- Design of Algorithm at Institute of Engineering and Technology, Bhaddal, Punjab on Sept 08, 2011
- Research: practices and processes at Modern Institute of Engineering and Technology (MIET), Kurukshetra held on August 04, 2011
- Balanced Trees at Faculty Development Programme at Rayat Institute of Engineering and Information Technology, Ropar Campus held on July 28, 2011
- Heterogeneous systems and complexity at 3rd National Workshop on Latest Trends in Information Technology at Haryana College of Technology and Management on 14-15th July 2011
- Introductory concepts of algorithm complexity and classifications at three weeks UGC refresher course on IT organized by Kurukshetra University on June 16, 2011
- Complexity of algorithms and classification of algorithms at Seth Jai Prakash Mukund Lal Institute of Engineering and Technology JMIT Yamunanagar on April 23, 2011
- Teaching Algorithms in a better way at Technoholix, a technical festival organized by Geetanjali Institute of Technical Studies, Udaipur on March 03-05, 2011
- 3I: Industry Institute Interaction seminar organized by IEEE Delhi Section at Electronic for You(EFY) Expo at New Delhi on February 19, 2011
- Optimization Problems: Research Directions in Algorithms in Faculty Development Program at Rayat Institute of Engineering and Information Technology, Ropar Campus held on January 29-30, 2011
- Approximation Algorithms: Vertex Cover Problem in Research Promotion Workshop on Introduction to Graph and Geometric Algorithms held in Collaboration with Tata Institute of Fundamental Research (TIFR) sponsored by National Board of Higher Mathematics at Thapar University, Patiala, Punjab on October 28-30, 2010
- Complex Algorithms for Modern Applications in All India Seminar on Advance Computing at Doaba Institute of Engineering Technology, Kharar, Punjab on January 22, 2010
- Computer Applications and Data Structures in Workshop on Computers at Vikram College of Commerce, Patiala on December 02, 2009
- Algorithm Complexity: Various Issues at Faculty Development Programme at Rayat and Bahra Institute of Engineering and Biotechnology, Sahauran Campus July 28-31,2009
- Parallel Algorithms: Issues and Directions in AICTE Short Term Course on High Performance Computing: Issues and Applications held at Sant Longowal Institute of Engineering and Technology, Longowal on July 07, 2009
- Efficient Algorithm Analysis and Designing in AICTE Short Term Course on High Performance Computing: Issues and Applications held at Sant Longowal Institute of Engineering and Technology (SLIET), Longowal, Punjab on June 30, 2009
- Complexity Analysis in the Increasing Heterogeneity in two-day Seminar on ICT Developments: Past and Future at Dept. of Computer Science Applications, Punjab University, Chandigarh on March 27-28, 2009
- Complexity of Computer Algorithms in ISTE chapter Workshop on Advanced topics in Computer Science at Guru Nanak Institute of Management and Technology, Ludhiana in September 13, 2008
- Algorithm Design Strategies at Faculty Enablement Program for the teachers of North India Region under Infosys Campus Connect Program at Thapar Univ., Patiala, Punjab from June 23, 2008 to July 4, 2008
- Computational Geometry Algorithms at AICTE sponsored Staff Development Program on Design and Analysis of Algorithms for teachers of Engineering Institutions at Thapar University, Patiala, Punjab from May 26, 2008 to June 06, 2008
- Data Structures for Dynamic and Massive Data at ISTE sponsored Short term training program (STTP) on Latest Advances in Algorithms at Thapar University, Patiala, Punjab from June 9-13, 2008

- o Internet Security in safety week Initiative at Infosys Development Centre, Mohali on March 21, 2006
- o Bioinformatics at Infosys Development Centre, Mohali on February 10, 2006
- o Efficient Algorithms for Pattern Discovery of DNA Sequences at one-week National Workshop on IT advances in Pattern Discovery in Bioinformatics sponsored by Dept. of Biotech, MST, GOI from July 7-11, 03
- o Object Oriented concepts in RDBMS in ISTE-AICTE sponsored course on Advance Concepts in Data Management System, TTTI, Chandigarh on December 26, 2002
- o Multithreading for Mobile Applications at AICTE- ISTE Two weeks course on Advanced Java Programming at TIET, Patiala, Punjab from June 3-14, 2002

Workshops / Short Term Courses / Faculty Enablement Programs

- Five day workshop on "Big Data Analytics and Deep Learning" at Bennett University, Greater Noida from 16-20 December, 2017 with 180 participants from Engineering Institutions
- Workshop on Innovative research in pedagogy for Mini-MOOCs blended with instruction strategies to enhance quality of Higher Education at sponsored by Royal Academy of Engineering, UK and FICCI under Newton Bhabha Project at Thapar University, Patiala on March 03-04, 2017
- Workshop on ABET Accreditation and Program Assessment Workshop sponsored by ABET and IEEE Education Society, India Council at New Delhi on August 30, 2015
- International Workshop on Machine Learning Algorithms and Data Analytics sponsored by ACM India Council, IEEE Computer Society IC, IEEE Education Society IC, Infosys Ltd. at Thapar University, Patiala from June 3-13, 2014
- 4-day Workshop on Identifying and Training Potential Stakeholder/Master Trainer's/Evaluators for NBA new Outcome Based Format at Thapar University, Patiala on April 29, 2013 and May 9-11, 2013
- Workshop on Outcome based Accreditation and NBA-SAR Evaluation at Thapar University, Patiala on April 19, 2013
- International Workshop on Advanced Data Structures and Algorithms in Collaboration with Infosys, ACM SIGACT North India, IEEE India Council, IEEE Computer Society Chapter Delhi Section, IEEE Aerospace Electronic System Society at Thapar University, Patiala from June 4-15, 2012
- Research Promotion Workshop on Introduction to Graph and Geometric Algorithms in Collaboration of Tata Institute of Fundamental Research (TIFR), Mumbai sponsored by National Board of Higher Mathematics, India at Thapar University, Patiala on October 28-30, 2010
- Organized:
  - o One-month Foundation Program for Generic Courses sponsored by Infosys with batch strength of 85 and 91 (2 batches) of 80 hours each at Thapar University, Patiala from January 06, 2009 to February 10, 2009
  - o Six Weeks Training course on J2EE- Oracle at Thapar University, Patiala from June 9, 2008 to July 18, 2008
  - o Faculty Awareness Camp on Entrepreneurship (FACE) sponsored by NSTEDB (National Science and Technology Entrepreneurship Development Board), DST for 40 teachers of Engineering Institutions at Thapar University, Patiala from June 14-16, 2008
  - o Short Term Training Program (STTP) on Latest Advances in Algorithms Sponsored by Indian Society of Technical Education (ISTE) for 60 Faculty Members of Engineering Institutions of India at Thapar University, Patiala from May 9, 2008 to June 13, 2008
  - o Two weeks Staff Development Program on Design and Analysis of Algorithms sponsored by AICTE (All India Council of Technical Education) for 60 Teachers of Engineering Institutions at Thapar University, Patiala from May 26, 2008 to June 6, 2008
  - o Two weeks Faculty Enablement Program (FEP) as a TTT (Train the Trainer) module of OS, DBMS, DAA, SDM, CHSSC for 50 teachers of Engineering Institutions of North India region under Campus Connect Program at Thapar University, Patiala from June 23, 2008 to July 4, 2008
  - o One-month course on Campus Connect Foundation Program for Generic Courses sponsored by Infosys with batch strength of 108 and 114 (2 batches) of 80 hours each at Thapar University, Patiala from January 6, 2008 to February 10, 2008
  - o One-month course on Campus Connect Foundation Program for Generic Courses sponsored by Infosys with batch strength of 112 each (2 batches) at Thapar University, Patiala January 6, 2007 to February 10, 2007
  - o One-month course on Fundamentals of Computers for Non-Teaching Staff of TU at Thapar University, Patiala from September 18, 2006 to October 29, 2006
  - o One-month course on Campus Connect Foundation Program for Generic Course sponsored by Infosys with 100 delivery hours with batch of 99 and 125 (2 batches) at Thapar University, Patiala from January 3, 2006 to February 5, 2006 and from February 24, 2006 to March 31, 2006
  - o One-month course on Campus Connect Foundation Program for Generic Course sponsored by Infosys, with 100 delivery hours and with batch strength of 100 each (2 Batches) at Thapar University, Patiala on June 6, 2005 to July 8, 2005
  - o One-week National Workshop on IT advances in Pattern Discovery in Bioinformatics sponsored by Department of Biotechnology, Ministry of Science and Technology, GOI for 37 teachers of Engineering Institutions from July 7 –11, 2003
  - o Two weeks C-NANCE-Sun Microsystems-AICTE Program of Advance Java Programming for students of Thapar University from July 1-12, 2002
  - o Two-week course on VC++ for faculty of Mechanical Engineering Department of Thapar University from June 17-28, 2002
  - o Two weeks course on Advanced Java Programming sponsored by AICTE-ISTE for 33 faculty members from other Engineering Institutions at Thapar University, Patiala from June 3-14, 2002
  - o One-week course on Core java at SLIET, Longowal, Punjab from December 25-29, 2000
  - o One-week course on Fundamentals of Computers for non-teaching staff of SLIET from December 18-22, 2000
  - o Two-month course on Internet and Java Technologies for 60 students of Thapar University, Patiala from April 3, 2000 to May 31, 2000
  - o Two-month course on Java Programming for 40 GNE students at GNE Ludhiana, Punjab from November 1, 1999 to December 31, 1999

Short Term Courses / Workshops Attended

- Attended:
  - Four Day IDEAL (Institute for the Development of Excellence in Accreditation Leadership) Workshop on Development and Implementation of a Program Assessment Plan at Baltimore, Maryland, US By ABET, USA
  - Two Day National Workshop on Quality Assurance and Accreditation at Hotel Ashok, New Delhi on May 12-13, 2013 by MHRD, NBA and UKIERI
  - NBA (National Board of Accreditation) Training for Evaluators, Master Trainers and Stakeholders at Suresh Gyan Vihar University, Jaipur on February 18- 19, 2013
  - NBA (National Board of Accreditation) Training for Evaluators, Master Trainers and Stakeholders at NMIMS, Shirpur, Maharashtra on February 15-16, 2013
  - Two weeks Faculty Enablement program on Foundational Computer Science Courses, an Industrial Perspective at Infosys, Pune from July 18-30, 2004
  - 2-week training on Eclipse conducted by IBM at IBM Research Lab, IIT Delhi from May 26, 2003 to June 13, 2003
  - 2-day workshop on WebCT and Web Based Learning Material at Jadavpur University, Kolkata, West Bengal from December 03-04, 2001
  - 2-week course on Advanced Networking, Internet and Intranet at Jadavpur University, Kolkata, West Bengal from November 19-30, 2001
  - One-week course on WebSphere Application Developer by IBM at Computer Science and Engineering Department, Thapar University, Patiala from November 3-6, 2001
  - One-week course on DB2-UDB by IBM at Thapar University, Patiala from October 17-21, 2001
  - One-week course on Visual Age for Java by IBM at Computer Science and Engineering Department, Thapar University, Patiala from October 10-14, 2001
  - One-week training programme on Aspects of Curriculum Development, Implementation and Evaluation at Curriculum Development Centre, TTTI (Now NITTTR), Chandigarh from July 30, 2001 to August 3, 2001
  - One-week training on Indian Sign Languages at SLIET, Longowal, Punjab from July 23-27, 2001
  - One-week TTT course on Java Programming by Sun Microsystems at New Delhi in June 2001
  - One-week course on SAP R/3 at SAP India, Bengaluru, Karnataka from December 7-11, 1998
  - One-week course on Assembler Macros of IBM 360 at IBM Global Services India, Bengaluru, Karnataka from February 2-6, 1998