

FACULTY INFORMATION FORMAT

Name: Dr. Sunanda

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Phone: 9419186757

School: CSE

Designation: Assistant Professor

Educational Qualification: Ph.D., MCA

Area of Research: Algorithms, Optimization, Complexity Analysis

JOURNAL PUBLICATIONS

1. Bakshi, Aditya, Sunanda Gupta, Akhil Gupta, Sudeep Tanwar, and Kuei-Fang Hsiao. "3T-FASDM: Linear discriminant analysis-based three-tier face anti-spoofing detection model using support vector machine." *International Journal of Communication Systems*. <https://doi.org/10.1002/dac.4441>
2. Gupta P., Kaushik B., Sunanda (2020) Suicidal Tendency on Social Media by Using Text Mining. In: Singh P., Sood S., Kumar Y., Paprzycki M., Pljonkin A., Hong WC. (eds) *Futuristic Trends in Networks and Computing Technologies. FTNCT 2019. Communications in Computer and Information Science*, vol 1206. Springer, Singapore.
3. Kour, Navleen, Sunanda Gupta, and Sakshi Arora. "A Survey of Knee Osteoarthritis Assessment Based on Gait." *Archives of Computational Methods in Engineering*: 1-41.
4. Kour, Navleen, and Sakshi Arora. "Computer-Vision Based Diagnosis of Parkinson's Disease via Gait: A Survey." *IEEE Access* 7 (2019): 156620-156645 .
5. Sudesh Kumar, Sakshi Arora, Sunanda, "Light-Fidelity: Next Generation Wireless Networks- A Survey, Proceedings of 2019 International Conference on Smart Systems and Inventive Technology (ICSSIT) IEEE Xplore digital library, pages: 668-671, DOI: [10.1109/ICSSIT46314.2019.8987757](https://doi.org/10.1109/ICSSIT46314.2019.8987757) .
6. Kumar S., Sunanda, Arora S. (2020) A Statistical Analysis on KDD Cup'99 Dataset for the Network Intrusion Detection System. In: M. Thampi S. et al. (eds) *Applied Soft Computing and Communication Networks. ACN 2019. Lecture Notes in Networks and Systems*, vol 125. Springer, Singapore

7. Sharma, Cheena, Sunanda "Performance Analysis of ECC and RSA for Securing CoAP-Based Remote Health Monitoring System." *Ambient Communications and Computer Systems*. Springer, Singapore, 2018. 615-628
8. Bakshi Aditya, Sunanda, "A Comparative Analysis of Different Intrusion Detection Techniques in Cloud Computing", *Advanced Informatics for Computing Research*, 358-378, CCIS series, vol (956), 2018.
9. Bal, Rausheen, Aditya Bakshi, and Sunanda Gupta. "Performance Evaluation of Optimization Techniques with Vector Quantization Used for Image Compression." *Harmony Search and Nature Inspired Optimization Algorithms*. Springer, Singapore, 2019. 879-888.
10. Sharma Cheena, Sunanda, "Survey on Smart Healthcare: An application of IoT", *International Journal on emerging technologies*, 330-333 8(1), 2017.
11. Khajuria Rakshit, Sunanda, Singh Sidharth, "A Survey of Existing Leaf Disease Detection Techniques using Artificial Neural Network", *International Journal of Computer Trends and Technology*, Vol 59, Issue 1, 52-62, 2018.
12. Sunanda, Arora Sakshi, "A Review of Data Mining Issues in Cloud Environment", *Journal of Computer and Mathematical Sciences*, Vol.No. 6, 320- 325, (2017) (ISSN: 23198133).
13. "Genetic K-Means Clustering for Route Discovery in MultiCastNetworks", *International Journal of Control Theory and Applications*, Vol. 10 (4), 49-56 (2017). (ISSN-0974-5572)
14. "Virtual Machine Availability and Load Balancing in Cloud Environment", *International Journal of Control Theory and Applications*, Vol. 10 (4), 183-190 (2017). (ISSN-0974-5572)
15. "Security in Cloud Computing", *International Journal of Advance Research in Science and Engineering*, Vol.No. 5, 280-285 (2016) (ISSN: 2319-8346).
16. Revdikar Laxmikant, Mittal Ayush, Sharma Anuj, Sunanda, "A Naïve Breadth First Search Approach Incorporating Parallel Processing Technique For Optimal Network Traversal", *International Journal of Advanced Research in Computer and Communication Engineering* Vol (5), 5, 2016. (ISSN: 2319-5940)
17. "Boosting Simulated Annealing With Fitness Landscape Parameters for Better Optimality." *International Journal of Computing*, 14(2), 107-112. (h-index: 8)
18. Sunanda, Arora, S. (2015, September). An Archive Enhanced Hybrid Genetic Algorithm for Shortest Path Routing Problem. In *Proceedings of the Sixth International Conference on Computer and Communication Technology 2015* (pp. 147-151). ACM.
19. Arora Sakshi, Sunanda, "Effect of the Core Selection Strategy in Determining the Optimum BDMST in Multicast Networks", *Advances in Computer Science and Information Technology* Vol (2),2, (2015) (ISSN 2393-9907) pp. 249-251.

20. Arora Sakshi & Sunanda, "Genetic K-Means Clustering for Route Discovery in MultiCastNetworks", International Journal of Control Theory and Applications, Vol. 10 (4), 49-56 (2017) .
 21. Arora Sakshi & Sunanda, "Virtual Machine Availability and Load Balancing in Cloud Environment", International Journal of Control Theory and Applications, Vol. 10 (4), 183-190 (2017)
 22. Gupta, Sunanda., and Garg,M.L, "Diversity Maintenance Perspective: An Analysis of Exploratory Power and Function Optimization in Context of Adaptive Genetic Algorithms." Advances in Intelligent Systems and Computing, Springer (ISSN: 2194-5357) (2014).
 23. Gupta, S., &Garg, M. L. (2013). Binary trie coding scheme: an intelligent genetic algorithm avoiding premature convergence. International journal of computer mathematics, 90(5), 881-902.
 24. Gupta, Sunanda., and Garg,M.L. "GA implementation of the multi dimensional knapsack problem using compressed binary tries." Advances in Computational Research 1.2 (2009), pp. 43-46.(IF: 0.476)
 25. Gupta, Sunanda., and Garg,M.L. "An Improved Genetic Algorithm Based on Adaptive Repair Operator for Solving the Knapsack Problem." Journal of Computer Science 5.8 (2009): 544-547 (SJR: 0.3)
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CONFERENCE PUBLICATIONS

1. A Computer Vision based Approach towards Evaluation of Knee Osteoarthritis and Parkinson's disease via Gait Analysis- 6th International Conference on Recent Trends and Advancements in Engineering and Technology (ICRTAET) (17-19 Jan 2020)
2. Swarm Intelligence Based Nature Inspired Metaheuristics Used for Selecting Features in Opinion Mining - International Conference on Innovative Computing and Communication (ICICC 2020).
3. "Light Fidelity: Next Generation Wireless Networks – A Survey", 2nd International Conference on Smart Systems & Inventive Technology (ICSSITX 2019) organized by Francis Xavier Engineering College 27th -29th Nov. 2019, Tirunelveli, India.

4. "Satish, Sunanda, Arora Sakshi, "A Survey on the State of Art Approaches Used in Intrusion Detection System" , (165-176), International Conference on Machine Learning and Computational Intelligence, 28th -29th Sep.2017
5. Gupta, Sunanda, "Enhanced Genetic Algorithm with Memory Scheme for Vehicle Routing Problem ",3rd International Conference on Recent Trends and Advancements in Engineering and Technology 2016 (17-18 November).
6. Sharma Cheena., and Gupta, Sunanda., "Secure Energy Efficient e-Health Monitoring System ",3rd International Conference on Recent Trends and Advancements in Engineering and Technology 2016 (17-18 November).
7. Gupta, Sunanda., and Arora, Sakshi , "Cloud for Data Mining: Issues and Challenges", International Conference on Advancements in Engineering and Technology, Sangrur, 18th -19th March, 2016
8. Bakshi Aditya and Gupta, Sunanda, "Making Governments Digital India Mission Workable by Ensuring Security of a Wireless Network in a Mobile Adhoc Network Environment", National Seminar on Economics of Make in India, September 2015.
9. Gupta, Sunanda., and Arora,Sakshi, "An Archive Enhanced Hybrid Genetic Algorithm for Shortest Path Routing Problem" , International conference on computer and communication technology, MNIT Allahabad, September 25th -27th 2015.
10. Gupta, Sunanda., and Garg,M.L., "Mobile Agent Based Approaches for Fault Tolerance" 2nd National Conference on Emerging Principles & Practices of Computer Science & Information Technology (EPCSIT'09).
11. Gupta, Sunanda., and Arora,Sakshi., "Role of IT in Developing Countries" National Conference on India and Other Emerging Economies (BRIC) – A Comparative study" held on October 24,2007.
12. Arora,Sakshi., and Gupta,Sunanda., "Correlating Information Technology and National Development in Indian Context" at National Conference on India and Other Emerging Economies – A Comparative study" held on October 24,2007.
13. Gupta,Sunanda., "Effect of Different Topologies on PageRank" at IETE Conference in collaboration with Shri Mata Vaishno Devi University 2006.
14. Gupta,Sunanda., and Sharma,Devanand., "Computer Simulation and queues" at Indian Science Congress hosted by Nirma University 2005 .
15. Gupta,Sunanda., "Study of queues through computer simulation" at JK Science Congress 2005.

RESEARCH GUIDED

- **Ph.D. Supervision**

- 04 Candidates registered and Pursuing Ph.D.

- **Master's Thesis Supervision**

- 03 Candidates awarded Degree
 - 01 Candidate Pursuing **Dissertation**
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PROGRAM / TECHNICAL COMMITTEE MEMBER

1. *As Program Committee Members of the editorial board constituted for the International Conference Futuristic Trends in Networks & Computing Technologies, held at JayPee University of Information Technology, Waknaghat from 22nd to 23rd Nov. 2019*
2. Reviewed the manuscript, entitled "Performance analysis of chaotic maps in differential evolution algorithm for high-dimensional multimodal benchmark functions" for Journal of Experimental & Theoretical Artificial Intelligence. (2019)
3. *Reviewer for the paper "Dance Movement Learning for Automatic Labanotation Generation based on Motion Captured Data (April 2019) by IEEE Access.*
4. *Chaired a session in International conference on Machine Learning and Computational Intelligence (28-29 sep 2017) organized by Department of Computer Science & Engineering ,SMVDU.*
5. Reviewed the manuscript, entitled "Can Genetic Algorithms Help Virus Writers Reshape their Creations and Avoid Detection?..As Reviewer for the Journal of Experimental and Theoretical Artificial Intelligence, Taylor and Francis.
6. *As Program Committee Members of the editorial board constituted for the International Conference on Computing, Communication and Automation, held at Department of Computer Science & Engineering, Galgotia University, Uttar Pradesh from 15th -16th May 2015*
7. *As Program Committee members for the International conference on computing, communication and automation (ICCCA2015), 15-16th May 2015, Department of Computer science and engineering , Galgotia university, U.P, India*
8. *As Program Committee member for the International Symposium on Advanced Computing and Communication (ISACC 2015), 14-15 september 2015, Department of Computer science and engineering, Trigunasen school of technology, Assam university, Silchar Assam, India*
9. *As Program Committee member for the 1st International Conference on Next Generation Computing Technologies, 4-5 september; 2015, Center for Information Technology, University*

of Petroleum & Energy Studies, Dehradun (INDIA)

10. *As Program Committee member for the International conference on computing, communication and automation (ICCCA2016), 29-30th April 2016, School of Computer science and engineering , Galgotia university, U.P, India*

EDITORIAL BOARD MEMBER

1. Editorial Board member for the *American Journal of Networks and Communications(AJNC)*; ISSN: 2326-893X (Print).
2. Editorial Board member for the International Journal of Advancements in Technology.

PROJECTS GUIDED

1. PrateekGarg: “Quantitative Steganalysis of JPEG Images:Breaking the F5 Aklgorithm”.
2. Shaveta Sharma (2008ECS38): Implementation of Image Compression using DCT and DWT in Matlab.
3. ·KeshavAbrol (2008ECS30), Amulya Sharma (2008ECS59), ShagunPandoh (2008ECS51), “Face Detection and Recognition system with emotion detection”.
4. ChoudharyAbhishekArvind (2012ECS08), VinayakNayar (2012ECS39), Abhyuday Singh (2012ECS41) “Context Aware Recommender System”.
5. Anmol Sharma (2012ECS24), Naval Kishore (2012ECS54), “Link Analysis using Data Mining Techniques”.
6. Prateek Sharma (2011ECS19), Rajesh Kumar Pathak (2011ECS42), Sunny Kumar(2011ECS43) “Global Analytics on Tweets Sentiment”.
7. Aaryan Chopra (2013 ECS02), RohitSardalia (2013ECS42), Pranav Sharma (2013ECS31) “Alumin Record”.
8. Lalit Aggarwal (2013ECS31), Uttam Kumar (2013ECS52) “The extraction of textual information from images “.
9. Abhishek Arvind Choudhary (2012ECS08), VinayakNayar (2012ECS39), Abhyuday Pratap Singh (2012 ECS41) “Music Recommender System”.
10. Anuj Sharma (2012 ECS03), Aayush Mittal (2012 ECS07), LaxmiKantRevdikar (2012ECS10), “Multimedia Search Engine Research and Implementation of Text Search in Multimedia”.
11. Anuj Sharma (2012 ECS03), Aayush Mittal (2012 ECS07),”Optimal Network Analysis/Traversal using Graph Theory Approach”.
12. Ritesh Srivastav (2011ECS49) :A Real time adaptive “Recharge” and “Money Traffic” App.
13. Suryakant Bharti (2010ECS06), “Image Retrieval Engine:Research and Implementation of Context Based Image Retrieval”.

14. Arjun Mahajan (2010ECS35), Ankit Gupta (2010ECS49), MohitGoswami (2010ECS60):
“Cloud storage with high security and Multi-factor authentication”.
 15. Suryakant Bharti (2010ECS06), NehaGanjoo (2010ECS14), Tajesh Aggarwal (2010ECS15),
“GNU Image Manipulation Code Expansion”.
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BEST PAPER AWARDS

- Best Paper Award: In UGC Sponsored National Conference on Recent Trends in Information Technology, September 2009.
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PROFESSIONAL MEMBERSHIPS

- Lifetime Member IETE (Institute of Electronics and Telecommunication Engineers).
 - Lifetime Member ISTE (Indian Society for Technical Education).
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CONVENER / CO-CONVENER

1. Co Convenor for the workshop on Ethical Hacking & Cyber Security , organized at SMVDU (TEQIP III funded) from 25.9.2019 to 26.9.2019.
 2. Coordinator for Python Workshop organized by Teaching Learning Centre (ICT) , IIT Bombay , funded by Pandit Madan Mohan Malaviya National Mission on Teachers & Teaching (PMMNMTT) held at Shri Mata Vaishno Devi University, Kakriyal, Katra J&K, India on 25th May 2019.
 3. Co convenor in National conference on Information Technology and Business Analytics.
 4. Remote Center coordinator and workshop coordinator for Two days FDP on “Saptahaant Shikshak Prashikshan”on Introduction to Machine Learning conducted from “16th Dec - 17th Dec. 2017, organized by IIT kharagpur with SMVDU as Remote Centre. (Sponsored by TQIP III)
 5. Workshop Coordinator for AICTE Approved FDP on Foundation Program in ICT for Education from March 8,2018 to April 12, 2018, organized by IIT Bombay & SMVDU Katra as Remote centre.
 6. Workshop Coordinator for Pedagogy for Online and Blended Teaching-Learning Process (Re-run of FDP201x offered in 2017) from May 3rd to 30th, 2018 organized by IIT Bombay & SMVDU Katra as Remote centre.
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ADMINISTRATIVE RESPONSIBILITIES

- Warden Girls Shivalik Hostel, SMVD University, 2013- 2015.

- External Examiner for Practical Exam and Viva, University of Jammu.
- Member of the Committee on Gender Sensitization and Sexual Harassment during my tenure as warden Shivalik Hostel.
- *As Paper Setter for setting the paper in the discipline of “Information Technology” for the post of Engineer-IT.*
- Member of Anti Ragging Squad
- Member University Transport Committee
- I/c MCA Admission Committee.
- Member of the Doctoral Student Research Committees (DSRC)s from within and outside departments.

INVITED LECTURES/TALKS

1. Delivered a Lecture on Fundamentals of C to final year students of G.C.E.T on 13th Sep. 2019 from the perspective of campus placement.
2. Delivered a lecture on “Conditional Formatting & Data Validation for the Executive Training Program ‘Advance Computer Skills for Effective performance’ Executive Development Program towards capacity Building of the employees of SMVDSB: 9th September 2019 to 13th September 2019.
3. Delivered a lecture on “Conditional Formatting & Data Validation for the program ‘Advance Computer Skills for Effective performance’ Executive Development Program towards capacity Building of the employees of SMVDSB: 29th July 2019 to 2nd August 2019.
4. Delivered a lecture on Nature Inspired Algorithms in a Two Week Winter School for faculty from Engineering Streams, 16th Feb 2019 to 1st March 2019.
5. Delivered a lecture on “Practical Session: Integrating MS Excel and MS word for administrative workflow II’ for the program ‘Basic Computer Skills for Effective performance’ Executive Development Program towards capacity Building of the employees of SMVDSB: 4th February 2019 to 8th February 2019.
6. Delivered a guest lecture on “Metaheuristics and its Applicability”, on 13th March 2017 at Model Institute of Engineering and Technology, Jammu.
7. Delivered a lecture on the topic “Virus, Worms, Trojans, Antivirus and Firewalls”, during a 5 day workshop on “Cyber Crime” organized by Sher-I-Kashmir Police Academy, 2008.

Dr. Sunanda