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## **Dr. POONAM**

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### **Job Objective**

To utilize my skills and abilities in teaching that offers challenge and professional growth while being resourceful, innovative and flexible.

### **Work Experience**

Total work experience of 14+ Years in Teaching.

### **Job Summary**

Presently working as Assistant Professor in Electronics and Communications Engineering Department at Maharaja Surajmal Institute of Technology, Janakpuri, New Delhi. The successful seminars and practical labs I took in the College during my studies and teaching encourage me to take up an engineering challenge and develop it through the stages of concept, research, simulation and possibly implementation of the task.

I intend to make this opportunity a success for me as well the organization I work for. I see this opportunity as a crucial step as I move towards a successful career in Electronics and Communications Engineering.

### **Competency Summary**

#### ***Maharaja Surajmal Institute of Technology, Janakpuri, New Delhi***

14<sup>th</sup> Jan 2009 – till date

Working as Assistant Professor in Electronics and Communication Engineering Department.

### **Achievements**

- Received best paper award in International Conference on Computer and Computational Sciences (ICCCS'22) organized by ITS Engineering College, Greater Noida, Uttar Pradesh, February 11-12, 2022.
- Received letter of appreciation from SMES for being SPOC of winning team of SIH-2022.
- Received letter of appreciation from MoE's Innovation Cell, Govt. of India for working as a Chief Functionaries of the IIC at Maharaja Surajmal Institute of Technology, NEW DELHI.

## **Work Profile**

- Expertise in Digital Communication.
- College SPOC for Smart India Hackathon 2022. MSIT Team won first prize (Rs 1 Lakh) in this competition.
- Innovation Ambassador, IIC-MSIT.
- Activity Coordinator IIC-MSIT.
- Core Team Member for NAAC, IQAC, and NBA Accreditations.
- Held responsibility of University course coordinator of the subjects Digital Communication and Analog Electronics.
- Co-convener of Avensis'2020.
- Organized various FDPs in ECE Department.
- Organized expert guest lectures/ seminars/ webinars for the students.
- I have taught subjects: Satellite Communication, Wireless Communication, Digital Communication, Information Theory and Coding, Analog Electronics-I, Microprocessors and Microcontrollers, Embedded Systems etc.
- Prepared lesson plans of the subjects taught.
- Helped the pupils in their personal as well as professional growth via mentoring the students and providing them tutorial sheets.
- Held the responsibility of Training in charge for the II & III year ECE students and mentored them in arranging their trainings in the industry.
- Handled set up of Satellite and Antenna Lab in the Department.
- Purchased Vector Network Analyzer for ECE Department.
- Held the responsibility of Minor and Major Project in charge of ECE Department.
- Held the responsibility of Faculty Development Program in charge of ECE Department.
- Held the responsibility of Time Table in charge of ECE Department.
- Lab in charge of labs like Microprocessors and Microcontrollers, Satellite Communication, Communication Systems, Project Lab, Embedded Systems and Optical Communication.
- Actively involved in guiding several UG final year students for their projects on: 8051, PIC, AVR Microcontroller based Embedded Systems, and Image Processing.
- Prepared question papers for Mid Term as well as for End Term Examinations.
- Acting as an Examiner (Internal and External) in GGSIPU.
- Involved in paper evaluation work at GGSIPU.
- Held the responsibility of class proctor various times.

- Organized a five days FDP from NITTTR, Chandigarh on “Wireless Propagation” from Feb 25- March 1, 2019.
- Organized a one days FDP on “Design and Characterization of RF Antenna” on Feb 9, 2017.

## **Research Publications**

### **Journals**

Sr. No.	Paper Details	Indexing
1.	Kadian, <b>Poonam</b> , Shaifali M. Arora, and Nidhi Arora.2021 "Robust Digital Watermarking Techniques for Copyright Protection of Digital Data: A Survey." <i>Wireless Personal Communications</i> 2021: 1-25. <a href="https://link.springer.com/article/10.1007/s11277-021-08177-w">https://link.springer.com/article/10.1007/s11277-021-08177-w</a>	SCIE
2.	Kadian, <b>Poonam</b> , Nidhi Arora, and <b>Shaifali M. Arora</b> . 2019, A Highly Secure and Robust Copyright Protection Method for Grayscale Images using DWT-SVD., <i>International Journal of Recent Technology and Engineering</i> <a href="https://www.ijrte.org/portfolio-item/c6639098319/">https://www.ijrte.org/portfolio-item/c6639098319/</a>	Scopus
3.	Kadian, <b>Poonam</b> , Nidhi Arora, and Shaifali M. Arora. 2019, Role of Scaling Factor in Robust Digital Watermarking; <i>International Journal of Innovative Technology and Exploring Engineering (IJITEE)</i> , Vol :8,11, 1658-1669 <a href="https://www.ijitee.org/portfolio-item/K15050981119/">https://www.ijitee.org/portfolio-item/K15050981119/</a>	Scopus
4.	Dr Anshul Pareek, <b>Dr Poonam Dahiya</b> , Dr Shaifali M. Arora;2022; Vision Based Human Tracking: An Overview; <i>NeuroQuantology</i> ; October 2022 ; Volume 20 ; Issue 13; Page 3691-3698 <a href="https://www.neuroquantology.com/article.php?id=12858">https://www.neuroquantology.com/article.php?id=12858</a>	Scopus
5.	Dr Anshul Pareek, <b>Dr Poonam Dahiya</b> , Dr Shaifali M. Arora;2022; Covid-19 Radiographic Image Detector using CNN; <i>International Journal of Food and Nutrition Sciences</i> ;11(6) <a href="https://www.ijfans.org/issue-content/covid-19-radiographic-image-detector-using-cnn-2178">https://www.ijfans.org/issue-content/covid-19-radiographic-image-detector-using-cnn-2178</a>	UGC
6.	Dr Shaifali M. Arora, , Dr Anshul Pareek, <b>Dr Poonam Dahiya</b> ;2022; Content Based Movie Recommendation System; <i>International Journal of Food and Nutrition Sciences</i> ;11(7) <a href="https://www.ijfans.org/issue-content/content-based-movie-recommendation-system-2137">https://www.ijfans.org/issue-content/content-based-movie-recommendation-system-2137</a>	UGC
7.	<b>Dr. Poonam</b> , Dr Shaifali M. Arora, Dr Anshul Pareek; 2022; Analysis of Privacy Preserving methods in 4G and 5G Cellular Networks; <i>International Journal of Food and Nutrition Sciences</i> ;11(7) <a href="https://www.ij">https://www.ij</a>	UGC

	<a href="https://www.gisscience.net/issue-content/analysis-of-privacy-preserving-methods-in-4g-and-5g-cellular-networks-2194">fans.org/issue-content/analysis-of-privacy-preserving-methods-in-4g-and-5g-cellular-networks-2194</a>	
8.	Shaifali M. Arora, <b>Poonam Dahiya</b> , Anshul Pareek; 2022. IOT Based Weather Monitoring: A Survey. GIS Science Journal 202; 55 7-564,9(5) <a href="https://drive.google.com/file/d/1gEwiRHi-1n0q5b_3Y6you1TIn3BbMe0u/view">https://drive.google.com/file/d/1gEwiRHi-1n0q5b_3Y6you1TIn3BbMe0u/view</a>	Google scholar
9.	Shaifali M. Arora, <b>Poonam Dahiya</b> , Anshul Pareek; 2022; Secured Image Transfer Using DNA Operations Based On Chaotic Theory. GIS Science Journal; 616-621, 9(5) <a href="https://drive.google.com/file/d/1Gx9A1GRLs3kmueGRKB3tuE0D_WzPrN9-/view">https://drive.google.com/file/d/1Gx9A1GRLs3kmueGRKB3tuE0D_WzPrN9-/view</a>	Google scholar
10.	Shaifali M. Arora, <b>Poonam Dahiya</b> , Anshul Pareek; 2021; Content Based Movie Recommendation System with Removal of Low Rated Movies; Zeichen Journal ;186-192; 7(1) <a href="https://drive.google.com/file/d/1W6uCTenfl4qq1x8tCghxAhzzwcW_xcCr/view">https://drive.google.com/file/d/1W6uCTenfl4qq1x8tCghxAhzzwcW_xcCr/view</a>	Google scholar
11.	Shaifali M. Arora, <b>Dr Poonam Dahiya</b> , Dr Anshul Pareek, Credit Risk Analysis using Machine Learning, Zeichen Journal,6(12), 93 1- 935, 2020 <a href="https://drive.google.com/file/d/1kjYjS7DshM1s4vATzXVD95eeTS6jRbpq/view">https://drive.google.com/file/d/1kjYjS7DshM1s4vATzXVD95eeTS6jRbpq/view</a>	Google scholar

1. Kadian, P., Arora, S. M., & Arora, N. (2021). Robust Digital Watermarking Techniques for Copyright Protection of Digital Data: A Survey. Wireless Personal Communications, 1-25.
2. Kadian, Poonam, Nidhi Arora, and Shaifali M. Arora, (2019). "Role of scaling factor in Digital watermarking" International Journal of Innovative Technology and Exploring Engineering, vol. 8 (11), pp. 1658-1669.
3. Poonam, Arora, S.M., 2018. A DWT-SVD based robust digital watermarking for digital images. Procedia computer science, 132, pp.1441-1448.
4. Poonam, and Shaifali M. Arora, (2017). "Digital watermarking: An introduction" International Journal of Applied Research, Vol. 3(4), pp. 128-131.
5. Kadian, Poonam, Nidhi Arora, and Shaifali M. Arora, (2019). "A Highly Secure and Robust Copyright Protection Method for Grayscale Images using DWT-SVD" International Journal of Recent Technology and Engineering, Vol. 8(3), pp. 7284-7288.
6. IOT BASED WEATHER MONITORING: A SURVEY Dr. Shaifali M. Arora, Dr Poonam, Dr Anshul Pareek. <http://www.gisscience.net/VOLUME-9-ISSUE-5-2022/>.
7. Secured image transfer using DNA operations based on chaotic theory Dr Shaifali M. Arora, Dr Poonam, Dr Anshul Pareek <http://www.gisscience.net/VOLUME-9-ISSUE-5-2022/> GIS SCIENCE JOURNAL.
8. Dr Anshul Pareek, Dr Poonam Dahiya, Dr **Shaifali M. Arora;2022**; Vision Based Human Tracking: An Overview; NeuroQuantology; Volume 20 ; Issue 13; Page 3691-3698
9. Dr Anshul Pareek, Dr Poonam Dahiya, Dr **Shaifali M. Arora;2022**;; Covid-19 Radiographic Image Detector using CNN; International Journal of Food and Nutrition Sciences;11(6)
10. **Dr Shaifali M. Arora**, Dr Poonam Dahiya, Dr Anshul Pareek; 2020: Credit Risk Analysis

using Machine learning; Zeichen Journal; 6(12).

11. **Dr Shaifali M. Arora**, Dr Anshul Pareek, Dr Poonam Dahiya;2022; Content Based Movie Recommendation System; International Journal of Food and Nutrition Sciences;11(7)
12. Dr. Poonam, **Dr Shaifali M. Arora**, Dr Anshul Pareek; 2022; Analysis of Privacy Preserving methods in 4G and 5G Cellular Networks; International Journal of Food and Nutrition Sciences;11(7)
13. Poonam, (2016). "Review of Convolution Codes & its Applications" Satyam, MSIT, Vol. 5, pp. 39-41.
14. Poonam, Vikas Kumar, Tushar Chadha, Mayank Nayar, (2017). "IoT based Smart Energy meter reading and Bill generation" Satyam, MSIT, Vol. 6.
15. Poonam and Shaifali M. Arora, (2018). "Robust Digital Watermarking using DWT and RDWT" Satyam, MSIT, Vol. 7, pp. 25-29.
16. Poonam, (2021) "Design issues in Digital Watermarking System" Satyam, MSIT, pp 41-45.

### **Conferences**

1. Kadian, Poonam, Nidhi Arora, and Shaifali M. Arora. "Performance Evaluation of Robust Watermarking Using DWT-SVD and RDWT-SVD" In 2019 6th International Conference on Signal Processing and Integrated Networks (SPIN), pp. 987-991. IEEE, 2019.
2. Kadian, Poonam, Vasudha Arora, and Shaifali M. Arora, 2020. "Robust Watermarking Schemes for Copyright Protection of Digital Data: A Survey" In 2020 2<sup>nd</sup> International Conference on Emerging Technologies in Data Mining and Information Security (IEMIS 2020).
3. Pareek.A, Poonam, Shaifali M. Arora "SURF-Based Algorithm to deal with Pose Change Challenge in Human Tracking".in International conference ICCIS held at NIT Delhi in Dec 2021.
4. Poonam, Shaifali M. Arora, Pareek.A "Digital Image Watermarking: Potential Issues and it's Possible Solution" in International Conference on Computer and Computational Sciences ICCCS'22.at ITS College 11-12 Feb 2022.
5. Pareek.A, Poonam, Shaifali M. Arora "Vision-based human tracking in Real-Time Systems- A Survey" International Conference on Advanced Computing and Informatics (ICACI - 2022).
6. Poonam, Feb. 2018. "Role of ANN in Improvising Robust Digital Watermarking Techniques" Annual Research Conclave GD Goenka University.
7. Poonam, 2010. "Symbol detection algorithm for MIMO channels: VBLAST" In National Conference on Advances in VLSI, Embedded & Communication (AVEC-2010).

### **Patents**

1. Published a Patent on "Smart Healthcare Monitoring System using Internet of

Things”, File No. 202141030807.

2. Published a Patent on “A system for analysis of critical crisis management factors using Deep Learning”, File No. 202311003696

### **Membership in Professional Organization**

Lifetime member of **Soft Computing Research Society (SCRS)**.

### **Books Published**

1. Poonam Kadian and Shaifali M. Arora, “ARPS: An efficient Fast Block matching algorithm for Motion Estimation” LAP Lambert Academic Publication, 2021.
2. Poonam Kadian, “Digital Watermarking using MATLAB” LAP Lambert Academic Publication, 2021.
3. “IoT Based Health Monitoring System Paperback” – March 30, 2022 by Dr. Shaifali M. Arora (Author), Dr. Poonam Dahiya (Author), Dr. Anshul Pareek (Author)

[https://www.amazon.com/dp/B09WQF664T?ref\\_=pe\\_3052080\\_397514860](https://www.amazon.com/dp/B09WQF664T?ref_=pe_3052080_397514860)

### **Book Chapters Published**

1. Enhanced Image Security Through Hybrid Approach: Protect Your Copyright Over Digital Images, Shaifali M Arora, Poonam Kadian, 2023/2/14, Wireless Communication Security, John Wiley & Sons
2. A Solution to Pose Change Challenge: Real Time, Robust, and Adaptive Human Tracking Systems using SURF has been accepted to be published by April 2023 in Artificial Intelligence for Smart Healthcare (Springer).

### **Training/ FDP/ Workshop/ Conference attended**

1. Innovation Ambassador Advanced Level Training by MoE's Innovation Cell & AICTE.
2. Five days FDP on Advanced Embedded Systems by NITTTR, Chandigarh from 29/08/2022 to 02/09/2022.
3. Five days FDP on Recent trends in Artificial intelligence & its applications by MSIT, from 29/11/21 to 03/12/21.
4. One Month Training by MoE's Innovation Cell & AICTE, from 30/06/21 to 30/07/21.
5. Two weeks Training on AI for everyone by COURSERA, from 12/10/21 to 09/11/21.
6. Five days Training on Intellectual Property Management at Early Stage of Innovations & Startups by Department of Biomedical Engineering, Deenbandhu

- Chhotu Ram University of Science and Technology, Murthal, Sonapat, Haryana, from 04/10/21 to 09/10/21.
7. Five days FDP on Use of ICT in Engineering Education by ATAL, AICTE, from 15/03/21 to 20/03/21.
  8. Five days FDP on Data Analytics and Machine Learning Using Python by School of Information Technology, Rajiv Gandhi Proudyogiki Vishwavidyalaya from 12/07/21 to 16/07/21.
  9. Five days FDP on Application of Artificial Intelligence in Research and development by CSIR -Advanced Materials and Processes Research Institute, Bhopal, from 05/07/21 to 09/07/21.
  10. Five days FDP on Data Analysis & Machine Learning using Python from MSIT, from 29/11/21 to 03/12/21.
  11. Five days FDP on Recent advancements and challenges in IT, by MSIT, from 08/03/21 to 12/03/21.
  12. Five days FDP on Emerging Trends in OFC Technology by NITTTR, Chandigarh, from 19/10/20 to 23/10/20.
  13. Five days FDP on Machine Learning using Python by Brain Mentors, from 02/02/2020 to 06/02/2020.
  14. Five days FDP on Wireless Propagation through ICT by NITTTR, Chandigarh, from 25/02/19 to 01/03/19.
  15. Five days FDP on 4G & 5G by NITTTR, Chandigarh, from 17/09/18 to 21/09/18.
  16. Five days FDP on Classroom Communication through ICT by NITTTR, Chandigarh, from 28/05/18 to 01/06/18.
  17. Five days FDP on Artificial Neural Network using ICT by NITTTR, Chandigarh, from 25/04/16 to 29/04/16.
  18. Five days FDP on Digital Design using Verilog HDL by Trident Tech Labs, from 17/02/14 to 19/02/14.
  19. Five days FDP on 3G Communication by NITTTR, Chandigarh, from 24/08/19 to 28/08/19.
  20. Five days FDP on Modelling and Simulation using MATLAB by NITTTR, Chandigarh, from 21/05/18 to 25/05/18.