

Faculty Profile

Name : Dr. Priyanka Nandal
Designation : Associate Professor
Qualifications : Ph.D. (IIT Delhi), M.Tech., B.E.
Phone : 011-255-28117 Extn: 136
Email : priyankanandal@msit.in
Area of Interest/Specialization: Machine learning, Deep Learning,
Computer Simulation and Computational
Science, Computer Vision, Intelligent
Systems
Experience : 22 years



Key Publications

Research Papers Published in SCI/SCIE/ESCI Indexed International Journals

1. **P. Nandal**, V. Gaur, M. Bhutani, M. Sharma (2026). Automated Urine Sediment Microscopic Image Analysis Using YOLOv10 with Chimpanzee Leader Election Optimization. *Journal of Visualized Experiments (JoVE)*, e70799. [SCIE]
2. Malik, S., **Nandal, P.**, Pahal, S., Parikh, J., & Jain, R. (2025). Investigating U-Net variants for satellite image object detection: Towards an ensemble method and performance evaluation. *Evolving Systems*, 16 (3), 105. [SCIE]
3. Siwach, M., **Nandal, P.**, & Pahal, S. (2025) Coindonate: A blockchain-based platform for transparent online donation system. *Journal of Information and Optimization Sciences*. 46 (1), 157-166. [ESCI]
4. **Nandal, P.**, Pahal, S., Sharma, T., & Omesh, O. (2025). Real-Time Driver Drowsiness Detection Using YOLOv8 with Whale Optimization Algorithm. *SAE International Journal of Transportation Safety*, 13(09-13-01-0001). [ESCI]
5. **Nandal, P.**, Pahal, S., Khanna, A., & Pinheiro, P. R. (2024). Super-resolution of medical images using real ESRGAN. *IEEE Access*. [SCIE]
6. Kumar, P., **Nandal, P.**, Uma, R., & Sharma, R. P. (2023). Numerical simulation of modified nonlinear Schrodinger equation and turbulence generation. *Physics of Fluids*, 35(7). [SCIE]
7. Vimal, V., Muruganantham, R., Prabha, R., Arularasan, A. N., **Nandal, P.**, Chanthirasekaran, K., & Reddy Ranabothu, G. (2022). Enhance Software-Defined Network Security with IoT for Strengthen the Encryption of Information Access Control. *Computational Intelligence and Neuroscience*, 2022(1), 4437507. [SCI]
8. **Nandal, P.**, & Sharma, R. P. (2020). Numerical simulation on GPUs with CUDA to study nonlinear dynamics of whistler wave and its turbulent spectrum in radiation belts. *Computer Physics Communications*, 254, 107214. [SCI]

Research Papers Published in **Scopus Indexed Journals** (other than that mentioned above)

1. **Nandal, P.**, Pahal, S., Malik, S., & Sehrawat, N. (2025). Enhancing real time object detection for autonomous driving using YOLO-NAS algorithm with CLEO optimizer. *International Journal of Information Technology*, 17(3), 1321-1328.
2. Devi, M., **Nandal, P.**, & Sehrawat, H. (2024). A lightweight approach for intrusion detection in WSNs based on DCGAN. *International Journal of Information Technology*, 1-7.
3. Pahal, S., **Nandal, P.**, Gupta, N., & Sehrawat, N. (2024). Multiple Criteria-Based Intelligent Techniques for Efficient Handover in Next-Generation Networks. *International Journal of Sensors, Wireless Communications and Control*.
4. Gupta, N., Shekhar C., Pahal, S., Baghel S. K., **Nandal, P.** (2024). YOLOv5 Real Time Driver Drowsiness Detection using YOLOv5 and computer vision techniques, *Journal of Computational Analysis and Applications*, 33(8), 3165-3175
5. Devi, M., **Nandal, P.**, & Sehrawat, H. (2023). A Novel Rule-Based Intrusion Detection Framework for Secure Wireless Sensor Networks. *Journal of Data Acquisition and Processing*, 38(4) 936-944.

Research Papers in Conferences

1. Babli, **P. Nandal**, H. Sehrawat, "Energy Harvesting Techniques for Prolonging the Lifetime of IoT-Driven Wireless Sensor Networks", In 1st *International Conference on Advancing Sustainable Solutions through Technologies (ICASST-2026)* held on 5-6 Feb 2026, at Gurugram University, Gurugram.
2. Babli, **P. Nandal**, H. Sehrawat, "ResilientSense: An Adaptive Congestion-Aware and Fault-Resilient Framework for IoT-Based WSNs", In 9th *International Conference on Innovative Computing and Communication (ICICC-2026)* held on 6-7 Feb 2026, at Shaheed Sukhdev College of Business Studies, University of Delhi.
3. M Devi, **P. Nandal**, H. Sehrawat, "Developing WSN-Oriented Intrusion Detection Systems Using Machine Learning", In 8th *International Conference on Innovative Computing and Communication (ICICC-2025)* held on 14-15 Feb 2025, at Shaheed Sukhdev College of Business Studies, University of Delhi.
4. Babli, **P. Nandal**, H. Sehrawat, "A Survey on Energy-Efficient and Load Balancing Routing Protocols for IoT based WSNs", In 8th *International Conference on Innovative Computing and Communication (ICICC-2025)* held on 14-15 Feb 2025, at Shaheed Sukhdev College of Business Studies, University of Delhi.
5. V. Rohilla, **P. Nandal**, S. Pahal, "Deep LocAWS: A Deep Multilayer Perceptron Neural Network Collaborative Filtering for Location-Aware Web Service Recommendation", In 8th *International Conference on Innovative Computing and Communication (ICICC-2025)* held on 14-15 Feb 2025, at Shaheed Sukhdev College of Business Studies, University of Delhi.
6. Devi, M., **Nandal, P.**, & Sehrawat, H. (2024). Machine Learning Based IDS for WSNs: A Review. In *International Conference on Progressive Innovations in Intelligent Systems and Data Science (ICPIDS-2024)* held on 27-28 Dec 2024, at Pataya, Thailand.
7. Nidhi, S. Pahal, and **P. Nandal** (2024). Realtime Driver drowsiness detection using YOLOv5 and computer vision techniques. In 13th TIPSCON 2024: An International Conference on Nurturing growth through Indigenous Development: A key to Global Competence held on 10 Aug 2024 at India International Centre, new Delhi.
8. **P. Nandal**, and S. Pahal, (2024). Upscaling images with ESRGAN with perceptual loss. In 7th *International Conference on Innovative Computing and Communication (ICICC-2024)* held on 16-17 Feb 2024, at Shaheed Sukhdev College of Business Studies, University of Delhi.

9. S. Pahal, and **P. Nandal** (2024). Handover Challenges in Wireless Communications and Their Solutions. *Available at SSRN 4749805*.
10. Sunesh Malik, **P. Nandal**, Mamta, Aakansha, Revolutionizing Attendance Management: Deep Learning and HOG-Based Smart System for Educational Institutions, In International Conference on Computational Intelligence and Mathematical Applications (ICCIMA 2023) held on 21-22 Dec 2023, at Panipat Institute of Engineering and Technology (PIET), Samalkha, Haryana, India.
11. **P. Nandal**, "A Blockchain Based Management System for Product Tracing and Tracking in the Supply Chain", In 3rd *International Conference on Information Technology (InCITE 2023)*, held on 2-3rd March, 2023, at Amity University, UP.
12. M Devi, **P. Nandal**, H. Sehrawat, "DDOS attack in WSN using Machine Learning", In 6th *International Conference on Innovative Computing and Communication (ICICC-2023)* held on 17-18 Feb 2023, at Shaheed Sukhdev College of Business Studies, University of Delhi.
13. **P. Nandal**, "A Hybrid Model for Review Analysis Using Deep Learning", In *Proceedings of International Conference on Communication and Computational Technologies (ICCCT 2022)*, Algorithms for Intelligent Systems, 2023, pp. 381-389, Springer, Singapore. https://doi.org/10.1007/978-981-19-3951-8_29.
14. **P. Nandal**, Y. Kadian, S. Upadhyay and B. P. Mudgal, "Pronunciation Accuracy Calculator using Machine Learning," *2021 5th International Conference on Computing Methodologies and Communication (ICCMC)*, 2021, pp. 1128-1133, doi: 10.1109/ICCMC51019.2021.9418381.
15. **P. Nandal**, A. Satyawali, D. Sachdeva and A. S. Tomar, "Graph Coloring based Scheduling Algorithm to automatically generate College Course Timetable," *2021 11th International Conference on Cloud Computing, Data Science & Engineering (Confluence)*, 2021, pp. 210-214, doi: 10.1109/Confluence51648.2021.9377151.
16. **P. Nandal**, "Deep Learning in diverse computing and Network applications student admission predictor using deep learning" in *International Conference on Innovative Computing and Communication (ICICC-2020)* held on 21-23 Feb 2020, at Shaheed Sukhdev College of Business Studies, University of Delhi.
17. **P. Nandal**, "Smell-O-Vision Device" in *International conference on Computational Methods and Data Engineering (ICMDE 2020)*, Springer, held on 30-31 Jan 2020, at SRM University Delhi-NCR.
18. **P. Nandal**, "Speech Separation using Deep Learning" in *International Conference on Sustainable Communication Networks and Application (ICSCN 2019)*, Springer, Cham, pp. 319-326, held on 30-31 Jul 2019, at Surya Engineering College, Erode, TN, India.
19. **Priyanka** and S. Goel, "A compression algorithm for DNA that uses ASCII values", *IEEE International Advance Computing Conference (IACC2014)*, pp.739-743, held on 21-22 Feb 2014, at Gurgaon, India.

Books Authored

1. **P. Nandal**, (2021). Optimizing Web Search Results for Image: K-means Clustering Algorithm. ISBN 9783346348593.
2. **P. Nandal**, (2017). Digital watermarking to protect Images. ISBN 978-3-659-75147-9.
3. **P. Nandal**, (2017). Malware Detection. ISBN: 9783960672081.

Book Chapters in **International Books**

1. **P. Nandal**, (2021). Motion Imitation for monocular videos. In *Examining the Impact of Deep Learning and IoT on Multi-Industry Applications* (pp. 118-135). IGI Global.

Patent/Copyright

1. “IOT enabled obstruction evasion robots for enhancing the security of the system”, Patent No. 202111013252
2. “New computing paradigm for communications through edge computing”, Patent No. 202211031844
3. “Artificial intelligence based multi utility smart remote”, Patent no. 380819-001
4. “Automatic contactless fluid dispenser”, Patent no. 371887-001
5. “Wireless Sensor-Based Vegetable Quality Assessment Device”, Patent No. 463291-001

MOOCs / Online Certifications

- Data Mining – NPTEL, SWAYAM | 8-week online certification | Jan–Mar 2024
- Design, Technology and Innovation – NPTEL, SWAYAM | 8-week online certification | Jan–Mar 2023
- Accreditation of Undergraduate Engineering Programme – NITTTR Bhopal | SWAYAM online certification | Jul–Nov 2022
- Embedded Systems and Robotics – ERTS Lab, IIT Mumbai | 50-day online MOOC | Mar–May 2022
- Introduction to Machine Learning – NPTEL, SWAYAM | 8-week online certification | Jul–Sep 2019

Awards and Recognitions

1. Research Excellence Award from SMES for years 2023, 2024 and 2025.
2. Received Letter of Appreciation from SMES for excellent services in the institute on 16th May ' 2016.
3. Summer Faculty Research Fellowship from IIT Delhi from 16/05/2013 to 15/07/2013.

Professional Contributions – Summary

Actively contributes to the academic and research community through peer reviewing for reputed international journals and participation in technical and editorial activities. Has also served as Session Chair, Co-Session Chair, Session Coordinator, and Technical Program Committee Member in various national and international conferences, demonstrating strong academic leadership and professional engagement.