

DR. VIJAY BHASKAR SEMWAL PH.D.

EDUCATION	Department of Information Technology, IIIT Allahabad <i>Ph.D. in Robotics and AI</i> • Supervisor: Prof. Gora Chand Nandi • Research area: Gait Analysis & Deep Learning • Title: Development of Data Driven Computational Model for Bipedal Walking and Push Recovery. & CGPA: 9.0/10	Prayagraj, U.P., India 2013 - 2017
	Department of Information Technology, IIIT Allahabad <i>M.Tech. in Wireless communication & computing</i> • CGPA: 9.6/10, Rank: 1	Prayagraj, U.P., India 2008 - 2010
	Department of IT, College of Engineering Roorkee <i>B.Tech. in Information Technology</i> • Percentage 76%	Roorkee, U.K., India 2004 - 2008
PROFESSIONAL EXPERIENCE	Assistant Professor Grade-1 <i>Maulana Azad National Institute of Technology Bhopal, (MANIT Bhopal) Bhopal, India</i>	22-Dec-2023 - present
	Assistant Professor Grade-2 <i>Maulana Azad National Institute of Technology Bhopal, (MANIT Bhopal), Bhopal, India</i>	05-Feb-2019 - 21- Dec-2023
	Assistant Professor Grade-2 <i>National Institute of Technology Rourkela, (NIT Rourkela), Rourkela, India</i>	11-June-2018- 01-Feb-2019
	Assistant Professor <i>Indian Institute of Information Technology Dharwad, (IIIT Dharwad) Dharwad, Karnataka, India</i>	08-Aug-2016 - 08-June-2018
	Assistant Professor <i>National Institute of Technology Jamshedpur, (NIT Jamshedpur), Jamshedpur, India</i>	01-Jan-2016 - 06-Aug-2016

PH.D. RESEARCH SCHOLARS SUPERVISED

Completed Ph.D. Scholars

- [p1] Dr. Vishwanath Bijalwan (2018–2022), ICFAI University Dehradun, UK, India.
Topic: Development of a computational model for gait-based activities pattern analysis and push recovery stability of bipedal locomotion.
Position: Postdoc, Hanbat National University, South Korea.
- [p2] Dr. Rahul Jain (2019–2024), MANIT Bhopal, MP, India.
Topic: Development of a deep learning model for bipedal robot walk generation.
Position: Assistant Professor, NIFT Bhubaneswar.
- [p3] Dr. Anjali Gupta (2020–2025), MANIT Bhopal, MP, India.
Topic: Reconstruction of occluded human gait trajectory and activity recognition to improve lower extremity ergonomics capability.
Position: Assistant Professor, NIFT Bhopal.

- [p4] Dr. Prathibha Tokas (2022–2025), MANIT Bhopal, MP, India.
Topic: Automated Framework for Lower Limb Activity Recognition Using Wearable Sensor Data.
Position: Assistant Professor, UPES Dehradun, UK.
- [p5] Dr. Reenu Rajpoot (2021–present), MANIT Bhopal, MP, India.
Topic: Explainable AI (XAI) for Disease Prediction.
Position: NA
- [p6] Dr. Manoj Kumar Yadav (2019–2024), Amity Gwalior (VIT Bhopal).
Topic: Human Activity Recognition (HAR).
Position: Assistant Professor, VIT Bhopal.
- [p7] Dr. Ram Kumar Yadav (2019–2025), Amity Gwalior (Jaipur).
Topic: Gait Symmetry.
Position: Assistant Professor, Manipal Jaipur.

Ongoing Ph.D. Scholars

- [p8] Mr. Swapnil Murari, MANIT Bhopal, MP, India.
Topic: Optimal Trajectory Generation of Various English Alphabets Using Deep Learning Model for 3R Manipulator.
- [p9] Mr. Shivam Chaturvedi (2024–present), MANIT Bhopal, MP, India.
- [p10] Mrs. Soumya Pandey (2024–present), MANIT Bhopal, MP, India.
- [p11] Mr. Hemant Kumar Verma (2024–present), MANIT Bhopal, MP, India.
- [p12] Mr. Pranay Yadav (2025–present), MANIT Bhopal, MP, India.
- [p13] Ms. Megha Sahu (2025–present), MANIT Bhopal, MP, India.

RESEARCH/PROJECT FELLOWS

- [r14] Ms. Arpita Mahajan (2024–present)
Topic: Water body classification using deep learning techniques.
Grant: MPCOST.
- [r15] Mr. Pranay Yadav (2022–2023)
Topic: Biomechanical analysis of various human factors and ergonomics for elderly subject rehabilitation.
Grant: HEFA's CSR. (Next: PhD at MANIT Bhopal)
- [r16] Mrs. Anjali Gupta (Aug 2019–Dec 2020)
Topic: Gait analysis for rehabilitation of elderly subjects.
Grant: SERB's ECR. (Next: PhD at MANIT Bhopal)

PUBLICATIONS (2011-2026)

2026

- [J1] Tokas, Pratibha, and Vijay Bhaskar Semwal. "An Efficient Deep Learning Framework for Lower Limb Activity Recognition from Wearable Sensors in Knee Pathologies." *IEEE Sensors Journal*, 2026. IF 3.0.
- [J2] Pratibha Tokas, Vijay Bhaskar Semwal, and Sweta Jain. "Adaptive VMD-Based Explainable Hybrid Deep Learning Model for Robust Lower Limb Activity Recognition from sEMG Signals." *Arabian Journal for Science and Engineering (AJSE)*, 2026. IF 2.9.
- [J3] Radhika Khokale, Pratibha Tokas, Vijay Bhaskar Semwal, and Jyoti Bharti. "Gyroscope-Based Kinematic Analysis of Arm Swing in Parkinson's Disease: A Novel Methodology for Early Detection and Monitoring." *Sensor Review (Emerald)*, 2026. IF 2.5.
- [J4] Tokas, Pratibha, Vijay Bhaskar Semwal, and Surabhi Verma. "A Real-Time Deployable Attention-Driven CNN-LSTM Framework for Human Activity Recognition using Wearable Sensor." *IEEE Sensors Journal*, 2026. IF 3.0.

2025

- [J5] Gaud, Neha, Maya Rathore, Ugrasen Suman, and Vijay Bhaskar Semwal. “FIBiLS: Fall Detection of Healthy Elderly using IMU Sensor and BiLSTM Model.” *IEEE Sensors Journal*, 2025. IF 5.0.
- [J6] S. Tammishetty, V. B. Semwal, Y. Pathak, and D. Joshi. “Inverse Kinematic Solution Using Neural Networks for Multimodal Inputs and Optimization in Constrained Workspace.” *IEEE Sensors Letters*, vol. 9, no. 1, Jan. 2025. IF 3.0.
- [J7] Pratibha Tokas, Vijay Bhaskar Semwal, and Sweta Jain. “Explainable Deep Learning Framework for Lower Limb Activity Classification Using Reconstructed sEMG Signals in Healthy and Pathological Subjects.” *Applied Soft Computing*, Elsevier, 2025. IF 6.6, Q1.
- [J8] Tokas, Pratibha, Vijay Bhaskar Semwal, and Sweta Jain. “A Lightweight and Explainable Hybrid Deep Learning Model for Wearable Sensor-Based Human Activity Recognition.” *IEEE Sensors Journal*, 2025. IF 5.0.
- [J9] Soni, Vaibhav, Himanshu Yadav, Vijay Bhaskar Semwal, and Sudhakar Tripathi. “Improving Human Activity Recognition in Smart Healthcare with Ensemble Deep Learning.” *IETE Journal of Research*, 71(3): 894–908, 2025.
- [J10] Raj, A., Anjali, A., Singh, V. K., and Semwal, V. B. “Mapping Urban Heat Islands in Pune, India: Ecological Impacts and Environmental Challenges.” *Remote Sensing Letters*, 16(6): 654–664, 2025.
- [J11] Reenu Rajpoot, Sweta Jain, Vijay Bhaskar Semwal. “BioTransX: A Novel Bi-former Based Hybrid Model with Bi-Level Routing Attention for Brain Tumor Classification with Explainable Insights.” *Computers in Biology and Medicine*, 195:110515, 2025.
- [J12] Pratibha Tokas, Vijay Bhaskar Semwal, Sweta Jain. “A Smartphone-Based Human Activity Recognition Using Novel Multi-Stream Movelets on Fusion of Accelerometer and Gyroscope Data.” *Multimedia Tools and Applications*, 84(25):30259–30280, 2025.
- [J13] Reenu Rajpoot, Sweta Jain, Vijay Bhaskar Semwal, Deepankar Singh. “Quantitative Assessment of XAI Methods for COVID-19 Detection: A Comparative Approach.” *SN Computer Science*, 6(2), 2025.

Conference Papers (2025):

- [C14] Semwal, Vijay Bhaskar, et al. “Generation of Inverse Kinematics (IK) Trajectory of 3 Link Manipulator using Deep Learning Model.” *IEEE IC2E3*, 2025.
- [C15] Semwal, Vijay Bhaskar, et al. “FABRIK based Inverse Kinematic Solution of Manipulator Robot.” *IEEE IC2E3*, 2025.

2024

- [J16] Vaibhav Soni, Himanshu Yadav, Sadhna Bijrothiya, Vijay Bhaskar Semwal. “CABMNet: An Adaptive Two-Stage Deep Learning Network for Optimized Spatial and Temporal Analysis in Fall Detection.” *Biomedical Signal Processing and Control*, 96:106506, 2024.
- [J17] Navita Kumari, Amulya Yadagani, Basudeba Behera, Vijay Bhaskar Semwal, Somya Mohanty. “Human Motion Activity Recognition and Pattern Analysis Using Compressed Deep Neural Networks.” *Computational Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization*, 12(1), 2024.
- [J18] Anjali Gupta, Vijay Bhaskar Semwal. “Adaptive Neural & Fuzzy Controller for Exoskeleton Gait Pattern Control Based on Musculoskeletal Modeling.” *Multimedia Tools and Applications*, 83(16):49419–49439, 2024.
- [J19] Pratibha Tokas, Vijay Bhaskar Semwal, Sweta Jain. “Deep Ensemble Learning Approach for Lower Limb Movement Recognition from Multichannel sEMG Signals.” *Neural Computing and Applications*, 36(13):7373–7388, 2024.

2023

- [J20] Semwal, V. B., et al. “Development of the LSTM Model and Universal Polynomial Equation for All the Sub-Phases of Human Gait.” *IEEE Sensors Journal*, 23(14):15892–15900, 2023.

2022

- [j21] Jain, R., and V. B. Semwal. "A Novel Feature Extraction Method for Preimpact Fall Detection Using Deep Learning and Wearable Sensors." *IEEE Sensors Journal*, 22(23):22943–22951, 2022.
- [j22] Challa, S. K., A. Kumar, V. B. Semwal, and N. Dua. "An Optimized-LSTM and RGB-D Sensor-Based Human Gait Trajectory Generator for Bipedal Robot Walking." *IEEE Sensors Journal*, 22(24):24352–24363, 2022.
- [j23] R. Jain and V. B. Semwal, "A Novel Feature Extraction Method for Preimpact Fall Detection System Using Deep Learning and Wearable Sensors," *IEEE Sensors Journal*, vol. 22, no. 23, pp. 22943–22951, Dec. 2022.
- [j24] S. K. Challa, A. Kumar, V. B. Semwal and N. Dua, "An Optimized-LSTM and RGB-D Sensor-Based Human Gait Trajectory Generator for Bipedal Robot Walking," *IEEE Sensors Journal*, vol. 22, no. 24, pp. 24352–24363, Dec. 2022.
- [j25] Vijay Bhaskar Semwal, Neha Gaud, Praveen Lalwani, Vishwanath Bijalwan, Abhay Kumar Alok, "Pattern Identification of Different Human Joints for Different Human Walking Styles Using Inertial Measurement Unit (IMU) Sensor," *Artificial Intelligence Review*, 55(2):1149–1169 (2022).
- [j26] Vishwanath Bijalwan, Vijay Bhaskar Semwal, Ghanapriya Singh, Rubén González Crespo, "Heterogeneous Computing Model for Post-Injury Walking Pattern Restoration and Postural Stability Rehabilitation Exercise Recognition," *Expert Systems Journal of Knowledge Engineering*, 39(6) (2022).
- [j27] Rahul Jain, Vijay Bhaskar Semwal, Praveen Kaushik, "Deep Ensemble Learning Approach for Lower Extremity Activities Recognition Using Wearable Sensors," *Expert Systems Journal of Knowledge Engineering*, 39(6) (2022).
- [j28] Vishwanath Bijalwan, Vijay Bhaskar Semwal, Vishal Gupta, "Wearable Sensor-Based Pattern Mining for Human Activity Recognition: Deep Learning Approach," *Industrial Robot*, 49(1):21–33 (2022).
- [j29] Anjali Gupta, Vijay Bhaskar Semwal, "Occluded Gait Reconstruction in Multi-Person Gait Environment Using Different Numerical Methods," *Multimedia Tools and Applications*, 81(16):23421–23448 (2022).
- [j30] Rahul Jain, Vijay Bhaskar Semwal, Praveen Kaushik, "Stride Segmentation of Inertial Sensor Data Using Statistical Methods for Different Walking Activities," *Robotica*, 40(8):2567–2580 (2022).
- [j31] Sravan Kumar Challa, Akhilesh Kumar, Vijay Bhaskar Semwal, "A Multibranch CNN-BiLSTM Model for Human Activity Recognition Using Wearable Sensor Data," *The Visual Computer*, 38(12):4095–4109 (2022).

2021

- [j32] V. Bijalwan, V. B. Semwal and T. K. Mandal, "Fusion of Multi-Sensor-Based Biomechanical Gait Analysis Using Vision and Wearable Sensor," *IEEE Sensors Journal*, vol. 21, no. 13, pp. 14213–14220, July 2021.
- [j33] Nidhi Dua, Shiva Nand Singh, Vijay Bhaskar Semwal, "Multi-Input CNN-GRU Based Human Activity Recognition Using Wearable Sensors," *Computing*, 103(7):1461–1478 (2021).
- [j34] Vijay Bhaskar Semwal, Praveen Lalwani, Manas Kumar Mishra, Vishwanath Bijalwan, Jasroop Singh Chadha, "An Optimized Feature Selection Using Bio-Geography Optimization Technique for Human Walking Activities Recognition," *Computing*, 103(12):2893–2914 (2021).
- [j35] Vijay Bhaskar Semwal, Anjali Gupta, Praveen Lalwani, "An Optimized Hybrid Deep Learning Model Using Ensemble Learning Approach for Human Walking Activities Recognition," *Journal of Supercomputing*, 77(11):12256–12279 (2021).
- [c36] Vijay Bhaskar Semwal, Meghana Reddy, Aditya Narad, "Comparative Study of Inverse Kinematics Using Data Driven and FABRIK Approach," *AIR 2021*: 9:1–9:6.
- [c37] Vijay Bhaskar Semwal, Yash Gupta, "Performance Analysis of Data-Driven Techniques for Solving Inverse Kinematics Problems," *IntelliSys (1)*, 2021: 85–99.
- [i38] Vijay Bhaskar Semwal, Neha Gaud, Gora Chand Nandi, "Human Gait State Prediction Using Cellular Automata and Classification Using ELM," *CoRR abs/2105.03799* (2021).

2019

- [j39] Manish Raj, Vijay Bhaskar Semwal, Gora Chand Nandi, "Multiobjective Optimized Bipedal Locomotion," *International Journal of Machine Learning and Cybernetics*, 10(8):1997–2013 (2019).

2018

- [j40] Manish Raj, Vijay Bhaskar Semwal, Gora Chand Nandi, "Hybrid Model for Passive Locomotion Control of a Biped Humanoid: The Artificial Neural Network Approach," *International Journal of Interactive Multimedia and Artificial Intelligence*, 5(1):40–46 (2018).
- [j41] Manish Raj, Vijay Bhaskar Semwal, Gora Chand Nandi, "Bidirectional Association of Joint Angle Trajectories for Humanoid Locomotion: The Restricted Boltzmann Machine Approach," *Neural Computing and Applications*, 30(6):1747–1755 (2018).
- [j42] Vijay Bhaskar Semwal, Chandan Kumar, Piyush Kumar Mishra, Gora Chand Nandi, "Design of Vector Field for Different Subphases of Gait and Regeneration of Gait Pattern," *IEEE Transactions on Automation Science and Engineering*, 15(1):104–110 (2018).

2017

- [j43] Vijay Bhaskar Semwal, Joyeeta Singha, Pinki Kumari, Arun Chauhan, Basudeba Behera, "An Optimized Feature Selection Technique Based on Incremental Feature Analysis for Biometric Gait Data Classification," *Multimedia Tools and Applications*, 76(22):24457–24475 (2017).
- [j44] Vijay Bhaskar Semwal, Kaushik Mondal, Gora Chand Nandi, "Robust and Accurate Feature Selection for Humanoid Push Recovery and Classification: Deep Learning Approach," *Neural Computing and Applications*, 28(3):565–574 (2017).
- [j45] Vijay Bhaskar Semwal, Kaushik Mondal, Gora Chand Nandi, "Erratum to: Robust and Accurate Feature Selection for Humanoid Push Recovery and Classification: Deep Learning Approach," *Neural Computing and Applications*, 28(7):1907 (2017).
- [c46] John Anzola, Andrés Jiménez, Jordán Pascual Espada, Vijay Bhaskar Semwal, Vishwanath Bijalwan, "Analysis of TCP Streaming over VANETs," *RICE 2017*: 39–43.
- [c47] Sachin Kumar, Vijay Bhaskar Semwal, Vijender Kumar Solanki, Prayag Tiwari, Denis Kalitin, "A Conjoint Analysis of Road Accident Data Using K-Modes Clustering and Bayesian Networks," *RICE 2017*: 53–56.
- [c48] Daniel Meana-Llorián, Cristian González García, Jordán Pascual Espada, Manju Khari, Vijay Bhaskar Semwal, "Bilrost: Connecting the Internet of Things through Human Social Networks with a Domain-Specific Language," *RICE 2017*: 57–61.
- [e49] Vijender Kumar Solanki, Vijay Bhaskar Semwal, Rubén González Crespo, Vishwanath Bijalwan, "Proceedings of the Second International Conference on Research in Intelligent and Computing in Engineering (RICE 2017)," *Annals of Computer Science and Information Systems*, Vol. 10, ISBN 978-83-65750-05-1.
- [i50] Vijay Bhaskar Semwal, "Data Driven Computational Model for Bipedal Walking and Push Recovery," *CoRR abs/1710.06548* (2017).

2016–2015

- [j51] V. B. Semwal and G. C. Nandi, "Generation of Joint Trajectories Using Hybrid Automata-Based Model: A Rocking Block-Based Approach," *IEEE Sensors Journal*, vol. 16, no. 14, pp. 5805–5816, July 2016.
- [j52] V. B. Semwal and G. C. Nandi, "Toward Developing a Computational Model for Bipedal Push Recovery – A Brief," *IEEE Sensors Journal*, vol. 15, no. 4, pp. 2021–2022, Apr. 2015.
- [j53] Vijay Bhaskar Semwal, Pavan Chakraborty, Gora Chand Nandi, "Less Computationally Intensive Fuzzy Logic (Type-1)-Based Controller for Humanoid Push Recovery," *Robotics and Autonomous Systems*, 63:122–135 (2015).
- [j54] Vijay Bhaskar Semwal, Manish Raj, Gora Chand Nandi, "Biometric Gait Identification Based on a Multi-layer Perceptron," *Robotics and Autonomous Systems*, 65:65–75 (2015).
- [j55] Vijay Bhaskar Semwal, Shiv A. Katiyar, Rupak Chakraborty, Gora Chand Nandi, "Biologically-Inspired Push Recovery Capable Bipedal Locomotion Modeling Through Hybrid Automata," *Robotics and Autonomous Systems*, 70:181–190 (2015).

2014–2011

- [j56] Meenakshi Sati, Vivek Vikash, Vishwanath Bijalwan, Pinki Kumari, Manish Raj, Meenu Balodhi, Priya Gairola, Vijay Bhaskar Semwal, "A Fault-Tolerant Mobile Computing Model Based on Scalable Replica," *International Journal of Interactive Multimedia and Artificial Intelligence*, 2(6):58–68 (2014).
- [j57] Jay Prakash Gupta, Pushkar Dixit, Vijay Bhaskar Semwal, "Analysis of Gait Pattern to Recognize the Human Activities," *International Journal of Interactive Multimedia and Artificial Intelligence*, 2(7):7–16 (2014).
- [j58] Jay Prakash Gupta, Nishant Singh, Pushkar Dixit, Vijay Bhaskar Semwal, Shiv Ram Dubey, "Human Activity Recognition Using Gait Pattern," *International Journal of Computer Vision and Image Processing*, 3(3):31–53 (2013).
- [j59] Vijay Bhaskar Semwal, Vinay Bhaskar Semwal, Meenakshi Sati, Shirshu Verma, "Accurate Location Estimation of Moving Object in Wireless Sensor Network," *International Journal of Interactive Multimedia and Artificial Intelligence*, 1(4):71–75 (2011).
- [i60] Vijay Bhaskar Semwal, Shiv A. Katiyar, Pavan Chakraborty, Gora Chand Nandi, "Bipedal Model Based on Human Gait Pattern Parameters for Sagittal Plane Movement," *CoRR abs/1405.4362* (2014).
- [i61] Vijay Bhaskar Semwal, Gora Chand Nandi, "Study of Humanoid Push Recovery Based on Experiments," *CoRR abs/1405.4450* (2014).
- [i62] Vishwanath Bijalwan, Pinki Kumari, Jordán Pascual Espada, Vijay Bhaskar Semwal, "Machine Learning Approach for Text and Document Mining," *CoRR abs/1406.1580* (2014).
- [i63] Vijay Bhaskar Semwal, K. Susheel Kumar, Vinay S. Bhaskar, Meenakshi Sati, "Accurate Location Estimation of Moving Object with Energy Constraint and Adaptive Update Algorithms to Save Data," *CoRR abs/1108.1321* (2011).
- [i64] K. Susheel Kumar, Vijay Bhaskar Semwal, Ramesh Chandra Tripathi, "Real-Time Face Recognition Using AdaBoost Improved Fast PCA Algorithm," *CoRR abs/1108.1353* (2011).

PROJECTS/ CONSULTANCY	COMPLETED	
	Development of Heterogeneous computing model for post-injury walking pattern restoration and postural stability: Cognitive Robotics approach.	
	<i>CSR Grant by HEFA under Ministry of Education</i>	2021.01 - 2024.01
	Development of Computational model for bipedal walking trajectories generation and analysis of different gait abnormality	
	<i>Early Career Research (ECR) by Science and Engineering Research Board (SERB), Govt. of India under</i>	2019.12 - 2022.12
	Development of Computational model for bipedal walking trajectories generation and analysis of different gait abnormality	
	<i>Early Career Research (ECR) by Science and Engineering Research Board (SERB), Govt. of India under</i>	2019.12 - 2022.12
	Development of Computational model for bipedal walking trajectories generation and analysis of different gait abnormality	
	<i>Early Career Research (ECR) by Science and Engineering Research Board (SERB), Govt. of India under</i>	2019.12 - 2022.12
	A Preliminary Approach To Gait Recognition and Biomechanics of GAIT Analysis	
CONSULTANCY	<i>competitive research of Technical Education Quality Improvement Program (TEQIP-III) , Uttarakhand Technical University Dehradun</i>	2018.12 - 2020.12
	Development of low cost human hand motion generation framework for object grasping	
ONGOING	<i>MANIT Bhopal, India under Seed Grant</i>	2020.12 - 2022.12
	Farm Digitization, Crop Classification and Yield Prediction using Artificial Intelligence / Machine Learning	
AWARDS AND HONORS	<i>P2L IMPACT Learning Empowers Pvt. Ltd.</i>	2023.12 - 2024.12
	Impact of climate change and urbanization on water bodies of Madhya Pradesh using artificially intelligent image processing techniques: A critical analysis for development of model for surface water bodies monitoring system	
	<i>MPCST (Madhya Pradesh Council of Science and Technology), M.P. Govt.</i>	2023.12 - 2026.12
SKILLS	Hand-Gesture-based activities for human space mission	
	<i>ISRO</i>	2025.12 - 2027.12
AWARDS AND HONORS	• International Travel Support, SERB travel grand	2017.05
	• IEEE best volunteer award, IEEE India Council,	2018.12
	• SERB Early career award, DST Govt. of India	2019.11
	• Academic Scholarship, MHRD fellowship for Ph.D.	2013-2016
	• Academic Scholarship, MHRD fellowship for Ph.D.	2008-2010
SKILLS	Languages: Chinese, English, French.	
	Programming: Python, C++, MATLAB.	

CONFERENCES, WORKSHOPS, STTPs, FDPs ORGANIZED

Upcoming Events

- **Ujjain MahaKumbh Hackathon 2025:** Jury member to foster technological solutions for the upcoming Singhan 2028, organized by the Government of Madhya Pradesh (MPDSTE).
- **RCSM 2025 — Recent Trends in Computing and Smart Mobility:** Date: 5–6 December 2025, Venue: MANIT Bhopal, IEEE Conference ID: 67767, WikiCFP.
- **GenAI 2025 — Generative AI Applications:** Sponsored by ECIT Academy NIT Warangal, Date: 8–18 September 2025, Venue: MANIT Bhopal.

Conferences Organized

- Dec 19–20, 2024: Convenor: *1st International Conference on New Product Development and Smart Manufacturing (NPDSM 2024)* (Hybrid Mode).
- Dec 20–22, 2024: Convenor: *4th International Conference on Machine Vision & Augmented Intelligence (MVAI 2024)* (Hybrid Mode).
- Jan 19–20, 2023: Convenor: *4th International Conference on Machine Learning, Image Processing, Network Security, and Data Sciences (MIND 2022)* (Virtual Mode).
- Nov 22–26, 2022: Convenor: *2nd International Conference on Advances in Materials and Manufacturing Technology (ICAMMT 2022)* (Hybrid Mode).

Workshops, STTPs & FDPs Organized

- Mar 14–15, 2022: National Workshop (SERB-sponsored): *Human–Robot Interaction for Bipedal Locomotion*.
- Jan 2–6, 2023: Self-Sponsored STTP: *Artificial Intelligence and Deep Learning*.
- Jan 3–7, 2022: ATAL Academy–Sponsored FDP: *Optimization Techniques for Deep Learning*.
- May 17–21, 2021: Self-Sponsored STTP: *Artificial Intelligence and Deep Learning*.
- May 25–29, 2020: ATAL Academy–Sponsored FDP: *Robotics*.
- May 11–15, 2020: ATAL Academy–Sponsored FDP: *Artificial Intelligence*.
- Dec 16–20, 2019: Self-Sponsored Workshop: *Artificial Intelligence and Machine Learning Applications*.
- Dec 10–14, 2019: ATAL Academy–Sponsored FDP: *Robotics*.

ACADEMIC SERVICES **Associate Editor for:** *Multimedia Tools and Applications*, Springer,
Associate Editor for: *SN Computing*, Springer,
Associate Editor for: *IJIMAI-SCI*,
RCSM-2025,

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REVIEWER & EDITORIAL BOARD MEMBERSHIPS

Editorial Board Member

- **Editorial Board Member** — *Journal of Intelligent & Fuzzy Systems* (IOS Press, SCI Indexed, Impact Factor: X.XX).
- **Associate Editor** — *International Journal of Computational Vision and Robotics* (Inderscience Publishers).
- **Editorial Board Member** — *International Journal of Automation and Smart Technology*.

Reviewer for International Journals

- IEEE Transactions on Industrial Informatics
- IEEE Transactions on Artificial Intelligence
- IEEE Access
- Expert Systems with Applications (Elsevier)
- Knowledge-Based Systems (Elsevier)
- Pattern Recognition Letters (Elsevier)
- Robotics and Autonomous Systems (Elsevier)
- Neural Computing and Applications (Springer)
- International Journal of Social Robotics (Springer)
- Journal of Ambient Intelligence and Humanized Computing (Springer)

Reviewer for International Conferences

- IEEE International Conference on Robotics and Automation (ICRA)
- IEEE International Conference on Intelligent Robots and Systems (IROS)
- IEEE International Conference on Systems, Man, and Cybernetics (SMC)
- International Conference on Control, Automation, Robotics and Vision (ICARCV)

OUTREACH & PROFESSIONAL ACTIVITIES

Workshops, FDPs, STTPs Expert Talks Delivered

2025

- **FDP Lecture:** Harnessing Data Structures and Analytics for Real-World Applications, Acropolis Institute of Technology & Research, Indore (4–8 Aug 2025), in association with E&ICT Academy, NIT Warangal; sponsored by MeitY, Govt. of India.
- **Jury Member:** Ujjain MahaKumbh Hackathon 2025.

Invited Talks

- Delivered an expert talk at IIITM Gwalior in the Faculty Development Program (FDP) on AI and IoT for Cross-Sectoral Innovation: Bridging Agriculture, Finance, and Healthcare , 25 August 2025 (online).
- Drone Colloquium, Drone Workshop, MPSEDC, Bhopal.
- Prompt Engineering, Youth Empowerment through AI & Digital Skills, PSS Central Institute of Vocational Education (NCERT, Ministry of Education), Bhopal (15 Jul 2025).
- Generative AI in Journalism and Fact-Checking, Capacity-Building Program for PIB Officers.
- AR Applications for Virtual Museums, Indira Gandhi Rashtriya Manav Sangrahalaya, Bhopal.
- Deep Learning Model-Based Human Gait Analysis, IIITDM Kurnool Hybrid Workshop on *Introduction to Robotics* (17 Jul 2025).
- Foundations of AI, FDP, GIET University.
- Blockchain and Zero Trust Security in Cyber-Physical Systems, FDP on *Cyber-Physical Systems and Digital Arrest*, Bansal Institute of Science & Technology, Bhopal (7–12 Jul 2025).
- Integration of AI and Gamification for Effective Teaching-Learning Outcomes, Career College, Bhopal.
- The Rise of Deepfakes and Their Societal Impact, keynote under VIDYUT Scheme, Government Women's Polytechnic College, Bhopal.

Workshops, FDPs & Conferences

- **Resource Person:** *A Hands-on Approach in Deep Learning, LLMs, and Prompt Engineering*, IIIT Nagpur & Electronics & ICT Academy, IIITDM Jabalpur (14–25 Jul 2025).
- Expert Session: IATMSI-2025, ABV-IIITM Gwalior (6–8 Mar 2025).
- Session Chair: IIC-E, NIT Uttarakhand.
- Human–AI Collaboration in Creative Tasks, IIITDM Kurnool (31 Jul 2025).
- IoT with Machine Learning in Defense Applications, FDP, NIT Patna (4–16 Aug 2025).
- Deep Learning Techniques and Applications (DeLTA-2025), STC, NIT Kurukshetra (26 Feb – 2 Mar 2025).
- **Resource Person:** *Learning Dynamical System and Control: Foundation, Method, Algorithm, and Implementation*, LDC-FMAID 2025 Workshop, CQEDS, BIT Mesra (21–25 Jul 2025).
- LLM Applications, Graphic Era University, Dehradun.
- FDP Sessions, MANIT Bhopal.
- Emerging AI Applications, IIIT Jabalpur (with Dr. Ashish Shukla).

Special Engagements

- Interaction with students at NIFT Bhopal, invited by Dr. Anjali Gupta (Ph.D. scholar).

2024

- **NIT Raipur:** Jury member for CSE discipline, *19th Chhattisgarh Young Scientist Award (CYSA-2024)* (26–27 Feb 2024).
- **Vidyavardhaka College of Engineering, Mysuru:** Keynote & expert lecture on Machine Learning during 6-day ATAL FDP (15–20 Jan 2024) on "*Enabling Clear Communication: Innovations in Speech Enhancement and Hearing Aids for Indian Users*".

2023

- Invited lectures at: NIT Rourkela, NIT Jamshedpur, VIT Bhopal, BHU Varanasi.
- Chaired session on Machine Learning, *3rd Int. Conf. on Advanced Network Technologies and Intelligent Computing (ANTIC-2023)*, BHU Varanasi (20–22 Dec 2023).
- Chaired technical session, NIT Raipur.
- Guest lecture, SRM University AP.
- Invited talk, ICAR Rama University.

2021

- Organized Self-Sponsored STTP on AI & Deep Learning (17–21 May 2021) at MANIT Bhopal.
- Delivered keynote & expert talks at NIT Raipur, IIIT Guwahati, NIT Tiruchirappalli, NIT Jamshedpur, Institute of Technology Gopeshwar, Katihar Engineering College, IEST Shibpur, BHU Varanasi, Atal Bihari Vajpayee Vishwavidyalaya.

2020

- Organized AICTE–ATAL FDPs at MANIT Bhopal: *Robotics* (25–29 May 2020) and *Artificial Intelligence* (11–15 May 2020).
- Expert talks at NIT Jamshedpur, IIIT Lucknow, NITTTR Chandigarh, IIIT Nagpur on AI, ML, NLP, and Deep Learning.

2019

- Organized Self-Sponsored STTP on AI & ML Applications (16–20 Dec 2019) and AICTE–ATAL FDP on Robotics (10–14 Dec 2019) at MANIT Bhopal.
- Expert talks at NIT Silchar, Banasthali Vidyapith, and East West University Dhaka (Bangladesh).

Reviewer Roles

- **IEEE Journals:** IEEE Sensors Journal, IEEE Trans. on Human–Machine Systems, IEEE Trans. on Industrial Informatics, IEEE Robotics and Automation Letters, IEEE Trans. on Neural Systems and Rehabilitation, IEEE Signal Processing Letters, IEEE Communications Letters.
- **Other Journals:** Robotics and Autonomous Systems (Elsevier), Advanced Robotics (Taylor & Francis), Journal of Sensor Networks, Journal of Intelligent & Robotic Systems (Springer), International Journal of Social Robotics.

Technical Program Committee (TPC) Member

- SOCPoS 2015 (IIT Roorkee)
- IEEE CICN 2014
- IEEE ISPCC 2015 (Jaypee University, Solan)
- CNTIA 2015