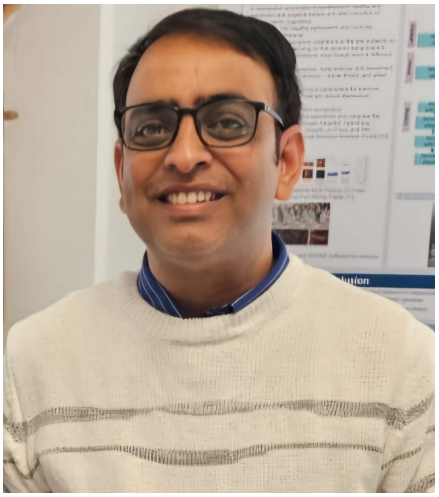
Vishwanath Bijalwan, Post-Doc,Ph.D.

vishwanathbijalwan@ieee.org
Google Scholar
ResearchGate
ORCID
DBLP
Scopus
Web of Science
LinkedIn
YouTube
Postdoctoral Lab, South Korea
DAAD AI-NET Fellow 04/2024
Homepage



Objective

To excel in Artificial Intelligence, specializing in Machine Learning, Deep Learning, Generative AI, and NLP, with a focus on advancing Human-Robot Interaction and physiological signal processing.

Research Area

Computer Vision, Human Gait, Soft Robotics, SMA Actuators, Wearable Sensors

Employment History

14 November 2023 Onwards — **Assistant professor, SR University(NIRF Rank 98 and NBA accredited University) Warangal, Telangana, India**

01 October 2022 to 31 October 2023 — **Post-Doctoral Fellow**,Intelligent Control and Robotics Lab(ICRS) **Hanbat National University(HBNU) Daejeon, South Korea**.

03 October 2013 – 23 September 2022 — **Assistant professor. Institute of Technology Gopeshwar (A State Government Institute affiliated to Uttarakhand Technical University(UTU) Dehradun, Uttarakhand, India)**.

October 2017 – December 2020 — **Project Coordinator TEQIP-III(Honorary).** Worked as a project coordinator of the Technical Education Quality Improvement Programme-III(A World Bank project driven by the Government of India, NPIU, MHRD) at the Institute of Technology Gopeshwar, Chamoli, Uttarakhand, I have been responsible for the development of the Institute through a number of assigned activities, which includes Purchase of Equipment's, Training (faculty and students), Conferences, Workshops, Startups funding, Accounting management and Overall responsible for Project Coordination.

February 2013 – September 2013 — **Assistant professor.** Department of Electronics and Communication Engineering, Uttaranchal Institute of Technology, Dehradun(Now Uttaranchal University), Uttarakhand, India).

February 2010 – August 2010 — **Network Field Engineer,HCL Infosystems Limited.** Worked on the Uttarakhand state-wide area network (UKSWAN) government of India project. The UKSWAN project is a networking project of the central government in which all district headquarters, tehsils, and block offices are connected with advanced networking with an optical fibre lease line. I worked there as a network engineer and managed the connection and routing of the routers. I also worked on switches, hubs, and firewalls. I deal with Cisco and Juniper routers.

Education

October 2017 – April 2022 — **Ph.D., ICFAI University, Dehradun** Electronics and Communication Engineering(Human Gait, Activity recognition,Biomedical Signal processing, Robotics, Deep Learning).
Thesis title: *Development of Computational Model for gait-based activities Pattern Analysis and Push Recovery stability of bipedal locomotion.*

2012 — **M.Tech.(Honours)**, Dehradun Institute of Technology(Uttarakhand Technical University), Dehradun, Uttarakhand, India in Digital communication(IEEE 802.15.4)
Thesis title: *Analysis & Design of Joint PHY-MAC layer for IEEE 802.15.4 Network*.

2010 — **B.Tech. ECE(NBA Accredited Branch)(Ist Division)**, Dehradun Institute of Technology(Gautam Buddh Technical University - GBTU, former UPTU), Lucknow, Uttarpradesh, India

2005 — **B.Sc. (Physics, Chemistry, Mathematics) Upto IInd Year**, DAV College Dehradun, HNBGU, Srinagar (Central University).

2003 — **XII (PCM) Intermediate (Ist Div 61%)**, Government Intermediate College, Purola, UK State Board Ramnagar, Uttarakhand.
01 Distinction in Physics.

2001 — **X (Highschool - Ist Div 68.85%)**, Government Intermediate College, Purola, UP State Board Allahabad.
03 Distinctions in Math, Science, Hindi.

Notable Professional Offers/ Recognition

DAAD Postdoc-NeT-AI Award (Germany) 2024 — I was selected as a DAAD AInet fellow for the Postdoc-NeT-AI 04/2024 Networking Week on AI Safety and Security. I visited the Machine Learning and Data Analytics (MAD) lab at FAU Erlangen-Nuremberg to discuss potential research collaborations with Prof. Bjoern Eskofier and Prof. Anne Koelewijn. I established connections with researchers from various fields, conducting research on advanced sensors and reinforcement learning. I traveled to Munich, Bamberg, and Erlangen, where I had the opportunity to interact with scientists from Siemens and TUV Rheinland.

Postdoc Offer - Oct 04, 2023 — Brain AI Lab, Monthly package of more than 03 Million KRW monthly, under Prof. Sangtae Ahn, School of Electronics Engineering, Kyungpook National University (Top Qs 500 ranking Institute), Daegu, South Korea.

Postdoc Offer - Sep 02, 2023 — Real-Time AI Systems Engineering Lab (RAISE) of 52 Million KRW Annual Package, under Prof. Hyeongboo Baek, Department of Computer Science, Incheon National University, Incheon, South Korea.

Postdoc Offer - Aug 25, 2022 — Dr. Sachin Kumar, Leading Scientist, Big Data and Machine Learning Research Lab, South Ural State University, Chelyabinsk, Russia.

Projects Completed/Applied

2019 **A preliminary Approach to gait recognition and Biomechanics of gait analysis, Principal Investigator, TEQIP-III, Uttarakhand Technical University Dehradun, Competitive Research Grant of INR 200000/-, status: completed**

Wireless Energy Harvesting Device for Intelligence Transporting System (ITS), Co-Principal Investigator TEQIP-III, Uttarakhand Technical University Dehradun, Competitive Research Grant of INR 200000/-, status: completed

2024 **Real-Time Neuroadaptive Rehabilitation System for Gait and Posture Correction in Post-stroke Patients, Applied in ECG ANRF, File No. 502024002882,Status: Applied**

Explainable AI for Detection and Classification of Calcifications in Digital Breast Tomosynthesis Images Using a Novel Deep Learning Algorithms, File No: CRD/2024/000849, ASEAN-India Collaborative R&D, Grant of 30 Lakh INR, Status: Applied

AI Enabled Early Gait Disorder Detection Using Wearable SMA Prosthetics, Principal Investigator: Dr. Vishwanath Bijalwan, Co-Investigators: Dr. Vijay Bhaskar Semwal, MANIT Bhopal under SERB SURE program, Grant of 30 Lakh INR, Status: Applied

Research Outreach

Citations	1183(Google Scholar), 688(Scopus) 400(WOS) .
h- Index	13(Google Scholar), 09 Scopus, 07 Web of Science,
i-10 Index	14
Sci-Indexed Journals	23(Till date), 03 (Submitted & Under Review), Scopus 27, Q1 Journals 11
Total Publications	60

International MoU's Done

2025 **Memorandum of Understanding with Universiti Teknologi MARA (UiTM), Malaysia**

Description: Successfully discussed and finalized the MoU between SR University and UiTM with Prof. Dr. Ts. Ir. Dr. Siti Noraini Sulaiman, Deputy Rector, Academic and International Affairs, UiTM, as the designated coordinator from UiTM. The partnership aims to foster collaborative research, faculty and student exchanges, and innovative academic initiatives. Status: Successfully Completed

Memorandum of Understanding with Phenikaa University, Hanoi, Vietnam

Description: Successfully discussed and finalized the MoU between SR University and Phenikaa University, Hanoi, Vietnam with Prof. Tran Duc Tan, Vice Dean, as the designated coordinator from Phenikaa University. This partnership is designed to encourage joint research projects, academic collaboration, and knowledge exchange. Status: Successfully Completed

Ph.D. Scholars Under Guidance

From Novmeber 2024 onwards — **N. Shiva Prasad**

Research Area: Computer Vision/AI Technology in Agriculture.

Status: Ongoing

From Feb 2024 onwards — **Sriramoju Archana**

Research Area: Computer Vision/ Healthcare Orthodontics

Status: Ongoing

Ph.D. Scholars Under Guidance (continued)

Swaroopa Rani Kothuri

Research Area: Computer Vision / Human Activity Recognition

Status: Ongoing

Jyoshnadevi Kusumba

Research Area: Computer Vision / UAV Pathplanning

Status: Ongoing

Research Publications(SCI/SCIE/Scopus)

Journal Articles

1. V. Bijalwan *et al.*, "Eeg-based motion intention detection for robotic rehabilitation: Evaluating classification and regression algorithms," *SN Computer Science*, 2024. DOI: 10.1007/s42979-024-03419-7.
2. V. Bijalwan, A. M. Khan, H. Baek, S. Jeon, and Y. Kim, "Interpretable human activity recognition with temporal convolutional networks and model-agnostic explanations," *IEEE Sensors Journal*, pp. 1–1, 2024. DOI: 10.1109/JSEN.2024.3418496.
3. A. M. Khan, V. Bijalwan, H. Baek, B. Shin, and Y. Kim, "Dynamic high-gain observer approach with sliding mode control for an arc-shaped shape memory alloy compliant actuator," *Microsystem Technologies*, pp. 1–8, 2024.
4. A. M. Khan, V. Bijalwan, B. Shin, and Y. Kim, "Adaptive neural network controller for the rotating sma actuator," *Sensors and Actuators A: Physical*, p. 115 240, 2024, ISSN: 0924-4247. DOI: https://doi.org/10.1016/j.sna.2024.115240.
5. V. Vellaiyan, V. R, V. Bijalwan, and Y. Singh, "Structural optimization and parameter investigation of trapezoidal shape soft pneumatic actuator," *Engineering Research Express*, vol. 6, no. 4, p. 045 510, 2024. DOI: 10.1088/2631-8695/ad80f9.
6. H. Baek, A. M. Khan, V. Bijalwan, and Y. Kim, "Dexterous robotic hand based on rotational shape memory alloy actuator-joints," *IEEE Transactions on Medical Robotics and Bionics*, Early Access, 2023. DOI: 10.1109/TMRB.2023.3315783.
7. H. Baek, N. A. Mansour, A. M. Khan, V. Bijalwan, H. F. Ali, and Y. Kim, "Sma-based caterpillar robot using antagonistic actuation," *Microsystem Technologies*, pp. 1–15, 2023.
8. V. Bijalwan, V. B. Semwal, G. Singh, and T. K. Mandal, "Hdl-psr: Modelling spatio-temporal features using hybrid deep learning approach for post-stroke rehabilitation," *Neural Processing Letters*, vol. 55, no. 1, pp. 279–298, 2023.
9. A. M. Khan, V. Bijalwan, H. Baek, B. Shin, and Y. Kim, "Integral sliding mode control (ismc) with an extended state observer (eso) for an arc-shaped shape memory alloy actuator," *Microsystem Technologies*, Aug. 2023, ISSN: 1432-1858. DOI: 10.1007/s00542-023-05516-8.
10. A. M. Khan, V. Bijalwan, B. Shin, and Y. Kim, "Adaptive neural network control design and analysis for sma actuators having dominant shape memory effect," 2023.
11. V. B. Semwal, Y. Kim, V. Bijalwan, *et al.*, "Development of the lstm model and universal polynomial equation for all the sub-phases of human gait," *IEEE Sensors Journal*, vol. 23, no. 14, pp. 15 892–15 900, 2023. DOI: 10.1109/JSEN.2023.3281401.
12. V. Bijalwan, V. B. Semwal, and V. Gupta, "Wearable sensor-based pattern mining for human activity recognition: Deep learning approach," *Industrial Robot: the international journal of robotics research and application*, vol. 49, no. 1, pp. 21–33, 2022.
13. V. Bijalwan, V. B. Semwal, G. Singh, and R. G. Crespo, "Heterogeneous computing model for post-injury walking pattern restoration and postural stability rehabilitation exercise recognition," *Expert Systems*, vol. 39, no. 6, e12706, 2022.
14. V. B. Semwal, N. Gaud, P. Lalwani, V. Bijalwan, and A. K. Alok, "Pattern identification of different human joints for different human walking styles using inertial measurement unit (imu) sensor," *Artificial Intelligence Review*, vol. 55, no. 2, pp. 1149–1169, 2022.

15 V. Bijalwan, V. B. Semwal, and T. Mandal, "Fusion of multi-sensor-based biomechanical gait analysis using vision and wearable sensor," *IEEE Sensors Journal*, vol. 21, no. 13, pp. 14 213–14 220, 2021.

16 V. B. Semwal, P. Lalwani, M. K. Mishra, V. Bijalwan, and J. S. Chadha, "An optimized feature selection using bio-geography optimization technique for human walking activities recognition," *Computing*, vol. 103, no. 12, pp. 2893–2914, 2021.

17 P. Bagwari, B. Saxena, M. Balodhi, and V. Bijalwan, "Comparison of feedforward network and radial basis function to detect leukemia," *International Journal of Interactive Multimedia and Artificial Intelligence*, vol. 4, no. 5, p. 55, 2017. DOI: 10.9781/ijimai.2017.4510.

18 V. Mehta, D. Punetha, and V. Bijalwan, "A real time approach to theft prevention in the field of transportation system," 2016.

19 V. Bijalwan, M. Balodhi, and A. Gusain, "Human emotion recognition using thermal image processing and eigenfaces," *International Journal of Enginnering and Science Research*, vol. 1, pp. 34–40, 2015.

20 V. Bijalwan *et al.*, "Machine learning approach for text and document mining." arxiv preprint," *arXiv preprint arXiv:1406.1580*, 2014.

21 V. Bijalwan, V. Kumar, P. Kumari, and J. Pascual, "Knn based machine learning approach for text and document mining," *International Journal of Database Theory and Application*, vol. 7, no. 1, pp. 61–70, 2014.

22 V. Bijalwan, P. Kumari, J. P. Espada, and V. B. Semwal, "Machine learning approach for text and document mining," *CoRR*, vol. abs/1406.1580, 2014. arXiv: 1406.1580. URL: http://arxiv.org/abs/1406.1580.

23 M. Sati, V. Vikash, V. Bijalwan, *et al.*, "A fault-tolerant mobile computing model based on scalable replica," *IJIMAI*, vol. 2, no. 6, pp. 58–68, 2014.

Conference Proceedings

1 H. Baek, A. M. Khan, V. Bijalwan, S. Jeon, M. Jeong, and Y. Kim, "Tensegrity-inspired multi-axis positioning sma actuator," in *2023 IEEE International Symposium on Robotic and Sensors Environments (ROSE)*, 2023, pp. 1–5. DOI: 10.1109/ROSE60297.2023.10410742.

2 H. Baek, A. M. Khan, V. Bijalwan, and Y. Kim, "Shape memory alloy based soft gripper," in *Information Storage and Processing Systems*, SCI-indexed, American Society of Mechanical Engineers, vol. 87219, 2023, V001T07A001.

3 H. Baek, A. M. Khan, V. Bijalwan, and Y. Kim, "Shape Memory Alloy Based Soft Gripper," ser. Information Storage and Processing Systems, vol. ASME 2023 32nd Conference on Information Storage and Processing Systems, Aug. 2023, V001T07A001. DOI: 10.1115/ISPS2023-109566. eprint: https://asmedigitalcollection.asme.org/ISPS/proceedings-pdf/ISPS2023/87219/V001T07A001/7047215/v001t07a001-isps2023-109566.pdf.

4 S. Jeon, V. Bijalwan, and Y. Kim, "Design of an sma-based flat actuator with a pattern inspired by amphibian lungs," in *2023 IEEE International Symposium on Robotic and Sensors Environments (ROSE)*, 2023, pp. 1–6. DOI: 10.1109/ROSE60297.2023.10410670.

5 G. K. Malik, A. Nainwal, Amrish, V. Bijalwan, and V. B. Semwal, "Arm fracture detection using deep convolution neural network," in *Recent Advances in Materials and Manufacturing Technology*, R. K. Nayak, M. K. Pradhan, A. Mandal, and J. P. Davim, Eds., Singapore: Springer Nature Singapore, 2023, pp. 203–212, ISBN: 978-981-99-2921-4.

6 M. K. Sain, J. Singha, and V. Bijalwan, "Dynamic hand gesture recognition using myolo-csrt and hgcnn for human–machine interaction," in *Machine Intelligence Techniques for Data Analysis and Signal Processing*, D. S. Sisodia, L. Garg, R. B. Pachori, and M. Tanveer, Eds., Singapore: Springer Nature Singapore, 2023, pp. 631–642, ISBN: 978-981-99-0085-5.

7 A. S. Bahuguna, K. Kumar, Y. P. Pundir, Alaknanda, and V. Bijalwan, "A review of various digital modulation schemes used in wireless communications," Springer, 2021, pp. 561–570.

8 B. T. Hung, V. B. Semwal, N. Gaud, and V. Bijalwan, "Hybrid deep learning approach for aspect detection on reviews," in *Proceedings of Integrated Intelligence Enable Networks and Computing: IIENC 2020*, Springer, 2021, pp. 991–999.

9 B. T. Hung, V. B. Semwal, N. Gaud, and V. Bijalwan, "Violent video detection by pre-trained model and cnn-lstm approach," in *Proceedings of Integrated Intelligence Enable Networks and Computing: IIENC 2020*, Springer, 2021, pp. 979–989.

10. A. John, A. Jiménez, J. P. Espada, V. B. Semwal, and V. Bijalwan, "Analysis of TCP streaming over VANETs," in *Proceedings of the Second International Conference on Research in Intelligent and Computing in Engineering*, IEEE, Jun. 2017. DOI: 10.15439/2017r107.

11. A. Bijalwan and V. Bijalwan, "Examining the crimninology using network forensic," in *8th National Conference USCSTC*, 2013.

Books and Chapters

1. K. K. S. Mer, V. B. Semwal, V. Bijalwan, and R. G. Crespo, *Proceedings of Integrated Intelligence Enable Networks and Computing: IIENC 2020*. Springer.

2. V. B. Semwal, A. Mazumdar, A. Jha, N. Gaud, and V. Bijalwan, "Speed, cloth and pose invariant gait recognition-based person identification," in *Machine learning: theoretical foundations and practical applications*, Springer, 2021, pp. 39–56.

3. V. K. Solanki, V. B. Semwal, R. G. Crespo, and V. Bijalwan, Eds., *Proceedings of the Second International Conference on Research in Intelligent and Computing in Engineering (RICE 2017), Gopeshwar, Uttrakhand, India, March 24-26, 2017* (Annals of Computer Science and Information Systems). 2017, vol. 10, ISBN: 978-83-65750-05-1. DOI: 10.15439/978-83-65750-05-1.

List of Publications (Under Process/Accepted)

2024
- Bijalwan, V., EEG-Based Motion Intention Detection for Robotic Rehabilitation: Evaluating Classification and Regression Algorithms, SN Computer Science. Manuscript No.: SNCS-D-24-01674R2. [Accepted for publication]
- Quantifying Hip Joint Asymmetries in Young Indian Adults During Multimodal Gait Analysis at Varying Speeds, IEEE Journal of Biomedical and Health Informatics.Under Review.
- Book Chapter Accepted, "A Systematic and Analytic Review on Drowsiness Detection System Based Real-Time Application" in book Innovations in Green Nanoscience and Nanotechnology: Synthesis, Characterization & Applications, CRC Taylor and Francis.
- Book Chapter Accepted, "PER-HDL: Physiotherapy Exercise Recognition with RGB-D Kinect Sensor and Hybrid Deep Learning Models" in book Rehabilitation Robotics and Healthcare Devices, Elsevier.
- Book Chapter Accepted, "Present and Future of Exoskeleton Robots for Rehabilitation" in book Rehabilitation Robotics and Healthcare Devices, Elsevier.

2023
- Paper Submitted, "Comparison of Deep Learning Models for Shape Memory Alloy Actuator for Soft Robotic Applications" in ASME 2023 Information Storage and Processing Systems (ISPS2023) USA.

Other Indexed Publications

2021
- **V. Bijalwan, D. V. B. S., A. Shekhar**, "Wearable Sensor Based Human Behaviour and Pattern Recognition Applying Deep Learning Technique.", Antardrishti IUD Journal of Interdisciplinary research, pages 37-49.
- **D. Kiran, I. Sharma, V. Bijalwan**, "Next Stage Of Outbreak-Behavioral Fatigue and COVID-19.", Antardrishti IUD Journal of Interdisciplinary research, pages 22-36.

2016
- **V. Bijalwan, M. Balodhi**, "Improvement on Image resolution enhancement using SWT and LWT with brightness enhancement", Research in Intelligent Computing in Engineering RICE 2016, Tata McGraw Hill TMH, Vol 1, Issue 1, ISBN-10: 93-5260-126-2, pages 367-370.

Other Indexed Publications (continued)

- **Vishwanath Bijalwan, Meenu Balodhi**, "Improved Edge detection Technique using Wavelet Transform, Binarization and Median Filter", TMH publications RICE 2016 Proceedings hard cover book, Vol 1, Issue 1, pages 361-366.

2015

- **V. Semwal. V. Bijalwan**, "Data Parallelization: GPU Vs Multicore-A brief", Technical Report.
- **V. Bijalwan**, "An accurate multi-hop routing mechanism for temperature sensing using TelosB mote", Technical Report.

- **V. Bijalwan, M. Balodhi, A. Gusain**, "Human emotion recognition using thermal image processing and eigenfaces", International Journal of Engineering and Science Research, 1, 34-40.

2013

- **S. Singh, V. Bijalwan**, "Design Of Wireless Sensor Network Node On Zigbee For Water Level Detection", IJESR, Volume 3, Issue 8.

- **V. Bijalwan, S. Singh**, "Analysis & Design of Joint Phy-MAC Model of IEEE 802.15.4", IJSETR, Volume 2, Issue 9.

2012

- **N. Gandotra, V. Bijalwan, M. Panwar**, "Coexistence model of Zigbee & IEEE 802.11 b (WLAN) in ubiquitous network environment", International Journal of Advanced Research in Computer Engineering & Technology, 4(1), 680-684.

List of Patents

2024

- **Ein integriertes System für Echtzeit-Computing- und Stromverwaltung, German Patent application no. 202401181917380ODE,Status : Granted**

2022

- **A System and Method for Bipedal Walking Trajectories Generation and Analysis of Gait Abnormality. Indian Patent 497221,Status : Granted**

- **An Efficient Adaptive Beamformer for Cellular Communications.Indian Patent,application no. 202141016330,Status : Filed**

2021

- **Improved Signum error LMS method for Directions-of-Arrival Estimation of Radio Signals using Rotational Invariance Technique.Indian Patent, application no. 202141028809,Status : Filed**

Reviewer / Editor/ Board Member

Current

Reviewer, IEEE Sensor Journal.
Reviewer, IEEE Signal Processing Letters.
Reviewer, Member of IEEE Robotics Society.
Reviewer, Robotica, Cambridge University Press.
Reviewer, IEEE Sensors letters.
Reviewer, ACM Transactions on Management Information Systems (SCI indexed).
Reviewer, Expert Systems, Wiley (SCI indexed).
Reviewer, Journal of Control and Decision (SCI indexed).
Reviewer & International advisory board member, Industrial Robot (SCI Indexed, Q2 Ranked Journal) Emerald Publishing Group.
Reviewer, International Journal of Distributed Sensor Networks (SCI Indexed).
Reviewer, Wireless Communications and Mobile Computing (SCI Indexed).
Reviewer, Multiple Journals of MDPI (SCI Indexed).
Reviewer, Computer Methods in Biomechanics and Biomedical Engineering (SCI Indexed).
Reviewer, Recent Patents on Engineering (SCI Indexed).
Reviewer, IEEE Transactions of Latin America (SCI Indexed).
Reviewer, Cluster Computing (SCI Indexed).
Editorial Board Member, Industrial Robot, Emerald (SCI and Scopus Indexed)
Editorial Board Member, International Journal of Interactive Multimedia & Artificial Intelligence (IJIMAI, SCI Indexed), Spain.
Editorial Board Member, Digital Manufacturing Technology Journal (ISSN: 2810-9317, ESCI indexed).
Editorial Board Member, International Research Journal of India (IRJI, ISSN 2454-8707).
Editorial Board Member, International Journal of Machine Learning and Networked Collaborative Engineering (IJMLNCE, ISSN 2581-3242).
Reviewer, IGI Global, USA.
Reviewer Board Member, OMICS Publishing Group-BIOBIO.
International Advisor, Japan-Bangladesh Robotics & Advanced Technology Research Center (JBRATRC).

2025

Technical Program Committee Member, 2025 11th International Conference on Communication and Signal Processing (ICCSP), which is going to be conducted from 5th to 7th June 2025 at Adhiparasakthi Engineering College, Melmaruvathur, Tamilnadu, India.

2024

Invited Chair, International Conference on Innovation and Challenges in Computing and Innovative Technologies for Sustainable Future (ICCIT-2024), conducted at British University Vietnam, Hanoi, Vietnam, from 12th to 14th December 2024.

Keynote Talk and Inauguration Chair, National Conference on Computing, Communication and Intelligent Systems on 22nd and 23rd April 2024 at Guru Nanak Dev Engineering College, Bidar, Karnataka.

Session Chair, 13th IEEE International Conference on Communication Systems and Network Technologies (CSNT-2024) at Gyan Ganga Institute of Technology and Sciences, Jabalpur

Session Chair, 5th International Conference on Recent Trends in Machine Learning, IoT, Smart Cities, and Applications (ICMISC-2024) at CMR Institute of Technology, Hyderabad

2023

Session Chair, The 8th International Conference on Research in Intelligent Computing in Engineering(RICE-2023) at Maulana Azad National Urdu University(Central university of India) Hyderabad
Session ChairAICTE sponsored IEEE international conference on Networks, Multimedia and Information Technology(NMITCON-2023) at NITTE Meenakshi Institute of Technology Bangalore, India, during 1 to 2 September 2023.
Reviewer (Technical Committee Member), The 9th International Conference on Fuzzy Systems and Data Mining (FSDM 2023) China.

Reviewer / Editor/ Board Member (continued)

2022
- **Technical Program Committee Member**, 7th International conference on Research in Intelligent Computing in Engineering RICE-2022, Thu Dau Mot University, Vietnam.
- **Technical Program Committee Member**, 8th International conference on Advances in Computing and Communication Engineering ICACCE-2022, Cyprus.
- **Technical Program Committee Member**, Springer Conference ICCISC-2022, Dev Bhoomi University, Dehradun, Uttarakhand.
- **Technical Program Committee Member**, Springer Conference International conference ICAMIDA 2022, JNEC Aurangabad.
- **Session Chair**, Springer Conference MISP-2022, National Institute of Technology, Raipur.
- **Reviewer (Technical Committee Member)**, FSDM-2022, Xiamen, China.
- **Technical Program Committee Member**, IEEE International conference ICACCM 2022, Tulas Institute, Dehradun.
- **Technical Program Committee Member**, 7th International conference RICE 2022, Hung Yen University of Technology and Education, Vietnam.
- **Session Chair**, International conference ICAMMT-2022, Maulana Azad National Institute of Technology, Bhopal.

2021
- **Program Chair**, International Conference ICACCT 2021 at GNDEC Bidar Karnataka.
- **Technical Program Committee Member**, International conference eC-DSIC 2021 at Thakur College of Engineering and Technology Mumbai.
- **Organizing Secretary**, 24th FAI-ICDBSMD 2021 Springer International conference.

2020
- **International Advisory Committee Member**, ICSIDEMPC-2020, JNEC Aurangabad
- **Reviewer**, International conference FRSM-2020, NIT Silchar.
- **Special Session Chair**, 6th IEEE International Conference on Advances in Computing and Communication Engineering (ICACCE-2020), LAS VEGAS, USA.
- **Organizing Chair**, International virtual conference on Integrated Intelligence Enable Networks & Computing IIENC-2020.

2019
- **Council Chair and Program Steering Committee Chair**, Springer conference RICE 2019, Hanoi, Vietnam.

2018
- **Program Chair**, IEEE conference RICE 2018, El-Salavador.
- **Session Chair**, International conference New Technological Opportunities in Networking and Sciences NEWTONS, SIT Pithoragarh.
- **National Advisory Committee Member and Technical Program Committee Member**, National Conference at THDC-IHET 2018 (NCECIC 2018).

2017
- **Organizing Chair**, IEEE Conference RICE 2017, IT, Gopeshwar, India during 24-26 March 2017.
- **Technical Program Committee Member**, IEEE Conference ICISIM-2017, JNEC Aurangabad.
- **Co-Convener**, National Conference on Progressive Science & Engineering NCPSE, IT Gopeshwar.
- **Reviewer**, IEEE Conference WICON-ECE 2017.
- **Convener**, National Conference on Progressive Science & Engineering NCPSE, IT Gopeshwar.
- **National Advisory Committee Member and Technical Program Committee Member**, National Conference at THDC-IHET 2018 (NCECIC 2017).

2016
- **Special Session Chair**, Conference RICE.
- **Reviewer**, IEEE Conference ICACCCA, Dehradun.
- **Reviewer**, IEEE Conference ICACCA, MJP Rohilkhand University, Bareilly, India.
- **Publicity Committee Member**, IEEE Conference ICACCE, Durban, South Africa.
- **Reviewer**, IEEE Conference ICACCE, Durban, South Africa.
- **Program Committee Member**, IEEE Conference CICN, Dehradun, India.
- **Co-Convener**, National Conference on Progressive Science & Engineering NCPSE, IT Gopeshwar.
- **Technical Program Committee Member**, National conference on Recent Trends in Computing & Electronics (COMEC), IIIT Dharwad.

Reviewer / Editor/ Board Member (continued)

2014 **Executive Committee Member**, IOCRSEM Conference, WIT Dehradun.

Administrative Experience

October 2017- 30 December 2020 **Project Coordinator, Technical Education Quality Improvement Program (TEQIP-III)**, Institute of Technology Gopeshwar, Government of India Project, National Project Implementation Unit (MHRD).

01 October 2021 – 23/09/2023 **Dean of Administration** Institute of Technology Gopeshwar.

03/10/2013 – 30/09/2017 **Head of Department (HOD), ECE**, Institute of Technology Gopeshwar.

08/09/2016 – 30/09/2017 **Dean of Academics**, Institute of Technology Gopeshwar.

07/10/2013 – June 2017 **Officer in Charge / Exam Controller**, Institute of Technology Gopeshwar.

2013-2022 **Officer, Director**, Handled the Charge of Director in absence at Institute of Technology Gopeshwar.

2017-2022 **Nodal Officer**, AISHE MHRD at Institute of Technology Gopeshwar.

2015-16, 2017-18 **Counseling Board Secretary for Admissions**, at Institute of Technology Gopeshwar.

Since 2013 **Infrastructure Developer**, Developed many Laboratories, library, Auditorium, and workshops at Institute of Technology Gopeshwar.

Dates **Deputy Evaluation Head**, University Examination at at Institute of Technology Gopeshwar.

Member, Discipline Committee, Member Grievance Redressal Committee at Institute of Technology Gopeshwar.

2017 **Contributor**, Designed CAD Maps of Polling booths for District Chamoli in Uttarakhand Assembly Elections.

2015,2016 **Assistant Controller of Examination**, Various Government, UKSEE & Group C Exams at Institute of Technology Gopeshwar.

January-April 2022 **Election Duty Handler**, Experience in handling election duty of C-vigil monitoring systems and ETPBS in Indian elections at district collectraite Chamoli, India.

Short Term Courses / FDP Organized, Attended

05-09 October 2021 **Organizer**, AICTE ATAL 01 week FDP on Internet of Things.

05 and 06 July 2020 **Organizer**, 02 days online workshop on Artificial Intelligence & Deep Learning.

Short Term Courses / FDP Organized, Attended (continued)

11-15 June 2018 — **Organizer**, 01 Week FDP on Innovation in Solar based Application & Recent trends at IT Gopeshwar.

26-31 August 2019 — **Organizer**, 01 Week workshop on Essential Life, Social & Entrepreneurship Skills development for Students at Institute of Technology Gopeshwar.

17-21 September 2018 — **Organizer**, One-week STC on Analysis and optimization of 5G Wireless Communication at ECED UIET Kurukshetra, TEQIP-III.

26-27 February 2019 — **Organizer**, 2 days' workshop on Graphene based Device Fabrication and Characterization at UIET Kurukshetra.

16-17 March 2018 — **Organizer**, 2 days' workshop on NBA-OBE at IT Gopeshwar.

16-17 November 2018 — **Organizer**, 2 days' workshop on IOT at IT Gopeshwar.

26-31 August 2019 — **Organizer**, 01 Week FDP on Futuristic Electronics Materials, Devices and its applications at UIET Kurukshetra.

16-20 September 2019 — **Organizer**, 01 Week Workshop on "Machine Learning using Python" at Institute of Technology Gopeshwar.

02-04 September 2019 — **Organizer**, 03 days' workshop on "Designing Internet of Things Projects- A hands-on-Practice" at UIET Kurukshetra.

20-25 July 2020 — **Organizer**, 05 days Art of living workshop for Institute Faculties and staff.

29/04/2017 — **Organizer**, Blood donation camp with IMA Blood bank in the Institute.

18-22 June 2018 — **Attendee**, 01 Week Workshop on, "Active Learning, Autonomy, Academic Governance and R&D" at IIT Roorkee.

28 Jan – 01 February 2018 — **Attendee**, 01 Week PDT Program on Management capacity Enhancement Program for Teaching Staff at Port Blair.

3-7 December 2018 — **Attendee**, 01 Week Professional development Training at IIM Tiruchirappalli.

17-21 June 2019 — **Attendee**, 01 Week course on End-to-End Innovation at IIT Bombay.

04-08 June 2018 — **Attendee**, 01 Week FDP on Network & Cyber Security at THDC-IHET new Tehri.

Technical Courses / Training / Workshops

2022 — **Participated**, in ONLINE FACULTY DEVELOPMENT PROGRAMME (FDP) ON Industrial Automation and Robotics (1 – 13 August 2022) Organized by Electronics & ICT Academy, NIT Warangal.

2020 — **Participated and completed successfully**, AICTE Training and Learning (ATAL) academy online FDP on Robotics from 25/05/2020 to 29/05/2020 at MANIT Bhopal.

Technical Courses / Training / Workshops (continued)

- **Participated and completed successfully**, AICTE Training and Learning (ATAL) academy online FDP on Artificial Intelligence from 11/05/2020 to 15/05/2020 at MANIT Bhopal.

- **Successfully participated**, in Two weeks Online Faculty Development Program on Recent Research Trends in Electronics and Communication Engineering" at GBPIET Pauri from 18th Aug-28th Aug 2020.

2017 - **Participated**, in International workshop on pattern recognition (IWPAA) at Indian Statistical Institute Kolkata, 18 to 20 January 2017.

2015 - **Attended a workshop**, on Intellectual property right: In house patent filling on 24/08/2015 organized by CEP, UTU Dehradun.

Year - **Completed**, Coursera course on Structuring Machine Learning Projects.

- **Completed**, Coursera course on Improving Deep Neural Networks: Hyperparameters tuning, Regularization and Optimization by deeplearning.ai.

- **Completed**, Coursera course on Hierarchical Clustering: Customer Segmentation.

- **Completed**, Coursera course on Fundamentals of Scalable Data Science by IBM.

- **Completed**, Coursera course on Fundamentals of Network Communication by the University of Colorado.

- **Completed**, Coursera course on Neural Networks and Deep Learning by deeplearning.ai.

- **Completed**, Coursera Course on Programming for Everybody (getting started with Python) University of Michigan.

Additional Experiences and Achievements

2020 - **Academic Expert**, Course Review Committee of the stream 'Electronics Engineering' of Amity Polytechnic, Greater Noida Campus.

08 July 2020 - **Participant**, IEEE-ABET webinar on "Accreditation and Quality of Engineering Education in South Asia".

04 June 2020 - **Participant**, IEEE webinar on "Relevance of IEEE standards in Teaching, Learning and Industry Collaborations".

2020 - **Participant**, Webinar on Digitalization in Education organized by Saintgits college of Engineering.

2007 - **Trainee**, B.Tech vocational training in Tehri hydro development corporation THDC. Project: "operation and maintenance of various equipment's installed at THDC New Tehri".

- **Trainee**, B.Tech vocational training at BHEL automatic controls. Worked on Control and Instrumentation department in BHEL Haridwar.

21 July 2010 - **Participant**, Successfully completed the course Network Technology & Devices from HCL-CDC Dehradun.

Additional Experiences and Achievements (continued)

2007 — **Trainee**, Training at Nokia Siemens N/W with focus on GSM Technology.

2011 — **Attendee**, 3-day Workshop at Indian institute of Technology Kanpur on "Cognitive Radio- The next frontier in wireless communication" organized by BSNL-IITK Telecom center of Excellence.

2008 — **Presenter**, Delivered a seminar on topic, temperature regulated nonlinear micro valves for self-adaptive MEMS cooling.

24/08/2015 — **Attendee**, Workshop on Intellectual property right: In house patent filling organized by CEP, UTU Dehradun.

2015 — **Coordinator**, Successfully coordinated a one-week course of PLC/SCADA for the students of IT Gopeshwar with the experts of CETPA Dehradun.

Attendee, Two-day workshop at Institutions of Engineers Dehradun Jointly organized by IEI and UTU Dehradun.

18-20 January 2017 — **Participant**, International workshop on pattern recognition (IWPAA) in Indian statistical Institute Kolkata.

1 – 13 August, 2022 — **Participant**, Online faculty developement programme (FDP) ON Industrial Automation and Robotics. Organized by Electronics & ICT Academy, NIT Warangal.

Keynote Talks

2025
- Delivered an expert lecture on "Intelligent Design and Control of Shape Memory Alloy-Based Actuators: Integrating AI Algorithms for Advanced Robotic Applications" during the AICTE-ATAL Faculty Development Program (FDP) on "Importance of Artificial Intelligence in Robotics" at IIITDM, Kurnool, Andhra Pradesh.
- Delivered an expert lecture on "Neural Networks and Deep Learning" during the 5-day FDP on "Strong Foundations in Data Science: Principles and Techniques" on 13th January 2025, focusing on Attention Mechanisms and Transformer Architectures with applications in NLP and Computer Vision.
- Delivered an expert lecture on "IoT Devices & Sensors in the Internet of Robotics: Revolutionizing Automation and Connectivity" during the FDP on "Innovative IoT Solutions: From Concept to Implementations" at SR University, Warangal, Telangana, on 11th January 2025.

2024
- Delivered an expert lecture on "Deep Learning and Generative AI" at Tulas Institute, Dehradun, India on 21st and 22nd March 2024.
- Delivered a Keynote Talk Title: Unveiling the Future: Enhancing Human Activity Recognition through AI Assistance and Deep Learning Event: 5-day FDP on Advancements in Deep Learning, Machine Learning, Big Data, and AI at GNDEC Bidar Karnataka, India Date: 22 Feb. 2024

2023
- Delivered a keynote talk on "Multidisciplinary Investigations in Human Gait, Computer Vision and Soft Robotics" at Brain AI lab School of Electronics Engineering, Kyungpook National University Daegu, South Korea on 18th September 2023.

2022
- Delivered a keynote talk on "Computational Model for Human Gait Based Activities Pattern Analysis and Push Recovery Stability of Bipedal Locomotion" at Eighth International Conference on Advances in Computing and Communication Engineering (ICACCE - 2022) held in Cyprus during October 18-20, 2022.

2019
- **Keynote Speaker**, Delivered a keynote talk on energy conservation at IT Gopeshwar, jointly organized by IT Gopeshwar & Uttarakhand renewable energy & development agency (UREDA).

Keynote Talks (continued)

2015 Delivered a Keynote talk in the workshop on "National Workshop on concept of Physics: Popular lectures, Demons and low-cost experiment-2" on February 21-22 2015.

Skills

Languages	Strong reading, writing competencies for English.
Area of Interest	Robotics, Machine Learning, Basic Electronics, Digital Electronics, Deep Learning.
Software's Used	Python, Lab View, MATLAB, ROS, Jetson Nano,Xavier, Cadence Many other softwares.
Instrument's Used	Jetson Nano,Arduino, Microsoft Azure Kinect, V2 and V1, YLidarG2, Wearable Sensors.
Misc.	Academic research, Editor Asignments, books, teaching, training, Keynote talk, LaTeX typesetting and publishing.

Miscellaneous Experience

Awards and Achievements

2024 **DAAD Postdoc-NeT-AI Award**, selected as a DAAD AInet fellow for the Postdoc-NeT-AI 04/2024 Networking Week on Safety and Security in AI.

2022 **Startup Challenge Award**, Won the Start-up Challenge award of KRW 2000000 and secured the second position in the competition organized by the Daejeon International Innovator Program.

2021 **Excellence in the Research 2021**, facilitated by the Government of Uttarakhand, Uttarakhand Technical University, Uttarakhand Council of Science and Technology(UCOST) and Divya Himgiri on Teacher's Day, 05 September 2021.

Dr. Sarvapalli Radhakrishnan Certificate of Merit, facilitated by the Sikshak Kalyan Foundation and AICTE Delhi.

Certificate of Appreciation , Facilitated by honorable members of the Board of Governors for doing social service and different Innovative technology works for The Institute and Society during COVID-19 pandemic with full dedication and honesty.

2019 **Project Award, PI, Grant TEQIP-III CRS, Uttarakhand Technical University (Dehradun, IN)**, A Preliminary approach to gait recognition and biomechanics of gait analysis.

Project Award, Co-PI, Grant TEQIP-III CRS, Uttarakhand Technical University (Dehradun, IN), Wireless Energy Harvesting Device for Intelligence Transporting System (ITS).

Certification

2022 **Best paper Award** in International conference MISP 2022 at National Institute of Technology Raipur.

2010 **Certification**, Successfully completed HCNA (HCL Certified Network Associate).

2001 **Certification**, Passed NCC 'A' certificate with the rank of sergeant.

Government Assignments

2018-2019 **Auditor**, MIS data at GBPIET Pauri and BTKIT Dwarahat for Academic year under TEQIP-III.

Auditor, Procurement data at THDC-IHET New Tehri under TEQIP-III.

Organizer, A total of 11 BOG (Board of Governors) meetings of Institute of Technology Gopeshwar which includes the meeting with State Government officials, Reputed Industrialist of the state, AICTE nominee, and senior Academicians.

Miscellaneous Experience (continued)

Mentorship and Student Projects

2022 **Mentor**, for the student team MTXO in Smart India Hackathon 2022. The team entered the grand finale with the project "IoT based solution for recording and storing metrics of normal and orthotic leg for analysis by Orthotist." (Project code: RK-766). The problem statement was raised by the Department of Empowerment of Persons with Disabilities, Ministry of Social Justice and Empowerment.

Scholastic Achievements

2004 **Participation**, Ascot –Arakot Abhiyan: a social service initiative for encouraging village peoples of the Uttarakhand state towards ecosystem, education and their developments.

10th Standard **Recipient**,Uttarakhand Government Merit scholarship.

2009 **Participant**, Group discussion organized by Hindustan Times on "Young Voters wants opportunities in state".

Professional Affiliations

2011 **Member**, International Association of Engineers, (Membership No. 113594).

2013 **Member**, UACEE Australia.

Member, The Society of Digital Information and Wireless Communications.

2018 **Senior Member**, IEEE USA, (ID 94571691).

2023 **Professional Member**, Association for Computing Machinery (ID: 3047207).

Member, Robotics and Automation Society.

Personal Information

Date of Birth	Nov 07, 1985
Sex	Male
Father's Name	Mr. Radhey Shyam Bijalwan
Marital Status	Single
Language Proficiency	English, Hindi
Indian Address	Village Bajawala, Kaulagarh, New Forest Dehradun, Uttarakhand, India 248006 (Permanent Address) School of Computer Science & Artificial Intelligence, SR University Ananathsagar, Hasanparthy, Warangal Urban, Hanumakonda, Telangana, India, Pin 246424(Office Address)
Contact Number	+91-8126937623

Declaration

I hereby declare that all the information I gave in this curriculum vitae is true and correct to the best of my knowledge and belief.

Dated: 19/03/2025
(Dr. Vishwanath Bijalwan)

References

Prof. Youngshik Kim
Professor, Department of Mechanical Engineering
Hanbat National University, Daejeon, South Korea.
Mob. No. +821023073875
youngshik@hanbat.ac.kr

Prof. Ruben Gonzalez Crespo
Vice-Rector for Academic Organization and Teaching Staff Professor of Computer Science and Artificial Intelligence, Universidad Internacional de La Rioja,Advisor to the Ministry of Education, Spain and Colombia, in the University field. Spain
Daytime Phone No. +34 606012094
ruben.gonzalez@unir.net

Prof. Bjoern Eskofier
Professor, Head of the Chair Department Artificial Intelligence in Biomedical Engineering (AIBE) Lehrstuhl für Maschinelles Lernen und Datenanalytik
University of Erlangen-Nuremberg
Room 01.014 Carl-Thiersch-Straße 2b 91052 Erlangen
bjoern.eskofier@fau.de

Dr. Vijay Bhaskar Semwal
Assistant Professor, Department of CSE
Maulana Azad National Institute of Technology, Bhopal, India
Mob. No. +917541805885
vsemwal@manit.ac.in

Prof. Manoj kumar Panda
Professor, Department of Electrical Engineering
GBPIET Pauri(A Uttarakhand State Government Institute), India
Director, Women Institute of Technology, Dehradun, India
Mob. No. +919412990833
pandagbpec@gmail.com

Recommendation Letter

To Whom It May Concern,

I am writing to wholeheartedly recommend Dr. Vishwanath Bijalwan for any advanced faculty position or research opportunity that requires expertise in the fields of robotics, actuators, and biomechanics. I had the privilege of supervising Dr. Bijalwan during his Post-Doctoral Fellowship from October 1, 2022, to October 30, 2023, at the Intelligent Control and Robotics Lab (ICRS) in our institution.

Throughout his tenure, Dr. Bijalwan exhibited an exceptional depth of knowledge and an insatiable curiosity. He has worked extensively on SMA (Shape Memory Alloy) actuators, focusing on their modelling and control. His keen interest and meticulous approach enabled him to bring forward innovative solutions and methodologies, contributing significantly to our lab's advancements in this domain.

In addition to his work on actuators, Dr. Bijalwan undertook pioneering research in human gait analysis. His ability to bridge the gap between theoretical knowledge and practical application was evident in his work on wearable exosuits. The designs and mechanisms he proposed hold the potential to revolutionize assistive technology, offering enhanced mobility solutions for individuals with physical challenges.

What distinguishes Dr. Bijalwan from many other researchers I have encountered is his holistic approach to problem-solving. He does not merely focus on individual components but understands and addresses the system as a whole. This approach, combined with his collaborative spirit, ensures that he is a valuable asset to any team or project he undertakes.

In conclusion, I strongly endorse Dr. Vishwanath Bijalwan for any endeavors he chooses to pursue in the future. His expertise, dedication, and innovative mindset will undoubtedly bring invaluable contributions to the field of robotics and biomechanics.

Should you have any further inquiries or require additional information about Dr. Bijalwan, please do not hesitate to contact me.

Warm regards,

Prof. Kim Youngshik

Department of Mechanical Engineering
Hanbat National University (HBNU), Daejeon, Republic of Korea
Email: youngshik@hanbat.ac.kr
Contact #: +82-42-821-1163