

Dr. Bhavna Bajpai
Assistant Professor
Department of Computer Science and Engineering
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- **Research Interest:** Explainable and Generalizable AI for Mental Healthcare; Human–Computer Interaction; Cognitive Modeling; Biomedical Imaging; Brain Imaging (fMRI, EEG, MEG); Neurological and Physiological Signal Processing; Brain-Computer Interface.
 - **Educational Qualification:**
 1. **Ph.D.** : Computer Science and Engineering (Title: Explainable and Generalized Deep Learning Framework Study on Atypical Brain Network Development), Indian Institute of Technology, Jodhpur, India (2019-2025)
 2. **M.Tech:** Computer Science and Engineering (Specialization in Cyber Security), Central University of Punjab, Bhatinda, India (2017-2019)
 3. **B.Tech:** Information Technology, Uttar Pradesh Technical University, India (2012-2016)
 - **Professional Experience:**
 1. Assistant Professor Grade II at Sardar Vallabhbhai National Institute of Technology (**NIT**) **Surat** in the department of Computer Science and Engineering (Aug 2026-Present)
 2. Assistant Professor Grade II at Indian Institute of Science Education and Research (**IISER**) **Tirupati** in discipline of Computer Science (Aug 2026- Aug 2026)
 3. Faculty (Adhoc basis) at Indian Institute of Information Technology (**IIIT**) **Kota** in the department of Computer Science and Engineering (Dec 2025 – Jul 2026)
 4. Assistant Professor Grade I (6000 Grade Pay) at Amity University Noida (Apr 2025 – Dec 2025)
 - **Achievements:**
 1. Poster Presented and achieved Best Poster award at NEXT-GEN AI: INSPIRATION FROM BRAIN SCIENCE (NAiBS) 2023. (IIT Jodhpur)
 2. Abstract accepted at Organization for Human Brain Mapping (OHBM) 2023.
 3. Abstract accepted and presented at Annual Conference of Cognitive Science 9 (2023). (IIT Delhi)

4. Abstract accepted and presented at Annual Conference of Cognitive Science 10 (2024). (IIT Kanpur)
5. Best teaching assistant award for academic semester (July-December) 2022 at IIT Jodhpur.
6. Summer internship on designing algorithm for image reconstruction at Indian Institute of Information Technology, Jabalpur (2015).
7. Reviewer in Scientific Reports (Nature Journal), Neural Networks (Elsevier Journal), Applied Intelligence (Springer Journal), and CogSci Conference, IEEE Sensors Letters, Discover Artificial Intelligence, BMC Psychiatry, Biomedical Signal Processing and Control.

➤ **Skills:**

1. Programming languages: Python, Matlab, R, C, C++.
2. Proficient in analyzing diverse data types, including images, videos, time series, and text data.
3. Proficient in collecting and managing behavioral and experimental datasets for comprehensive analysis.

➤ **Courses Taught:**

1. Designing of Algorithms.
2. Generative Artificial Intelligence,
3. AI for Professionals,
4. Machine Learning and Theory Applications,
5. Big Data Analytics.

➤ **Publications:**

1. **Bhavna, K.**, Ghosh, N., Banerjee, R., & Roy, D. (2024). Characterization of the temporal stability of ToM and pain functional brain networks carry distinct developmental signatures during naturalistic viewing. *Scientific Reports*, 14(1), 22479.
2. **Bhavna, K.**, Sharma, S., & Rosado-Muñoz, A. (2026). ACVAE: An attention-based contrastive variational autoencoder for identifying ASD subgroups and their association with gene expression. *Neurocomputing*, 133145.
3. **Bhavna, K.**, Ghosh, N., Banerjee, R., & Roy, D. (2025). A lightweight, end-to-end explainable, and generalized attention-based graph neural network model trained on high-order spatiotemporal organization of dynamic functional connectivity to classify autistics from typically developing. *Network Neuroscience*, 9(4), 1323-1351.

4. **Bhavna, K.**, Akhter, A., Banerjee, R., & Roy, D. (2024). Explainable deep-learning framework: decoding brain states and prediction of individual performance in false-belief task at early childhood stage. *Frontiers in Neuroinformatics*, 18, 1392661.
5. **Bhavna Bajpai**, Maitry Amitkumar Chauhan, Abhinandan Kaistha, Manish Kumar Bajpai (2026). Decoding Cerebral Vasoregulation: An Attention-Based Bi-LSTM Framework for Elderly Ischemic Stroke Prediction and Biomarker Identification with Behavioral Associations (**Accepted in Scientific Report, Nature publication**).
6. Banerjee, S., **Bhavna, K.**, & Raychoudhury, T. (2023). Prediction of transport behavior of nanoparticles using machine learning algorithm: Physical significance of important features. *Journal of Contaminant Hydrology*, 258, 104237.
7. Maitry A., Abhinandan K., and Bhavna K. (2025). Lightweight 1D-CNN Framework for Stroke Classification and Biomarker Identification from Multimodal Physiological Signals. 5th International Conference on Machine Vision & Augmented Intelligence (MAI-2025).

➤ **Interest:**

1. Sports: Badminton and table tennis,
2. Travelling.