Devadripta Jadhav

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SUMMARY

Applied machine learning researcher with experience building and fine-tuning deep learning models for NLP, biomedical signals, and computer vision. Currently a Research Fellow at BITS Pilani, working on industry-sponsored ML systems at scale.

EDUCATION

Ph.D. in Computer Science and Information Systems (Full-Time) December 2025 - Present
Birla Institute of Technology and Science (BITS) Pilani, K K Birla Goa Campus   *Goa, India*

B.E. in Electronics and Telecommunication December 2021 - May 2025
Savitribai Phule Pune University   *Pune, India*

EXPERIENCE

Research Fellow December 2025 - Present
BITS Pilani, K K Birla Goa Campus   *Goa, India*

- Working on an industry-sponsored ML project for end-to-end automotive lifecycle and safety systems.

- Developing and evaluating ML models and pipelines for real-world, large-scale data.

Research Intern March 2023 - January 2025
Indian Institute of Education Science and Research (IISER), Kolkata   *Kolkata, India*

- Developed SportsOpi, a 43K-comment dataset on six major sports controversies, using LLaMA-3.1's multi-phase annotation and human verification ($\kappa > 0.8$) for reliable 4-way stance labels.

- Fine-tuned LLaMA-3.1-8b and DeepSeek-8b, raising stance-detection F1 from ~ 0.35 to ~ 0.75 and performed attention-based probing to interpret model gains.

Research Intern December 2023 - March 2024
Defence Institute of Advanced Technology, Defence Research and Development Organisation (DIAT, DRDO)   *Pune, India*

- Developed a novel EEG signal classification method for upper limb movement tasks, achieving 97.50% micro-averaged accuracy and 99.17% mean accuracy, outperforming recent approaches.

- Extracted and evaluated time-domain statistical and band-power features from pre-processed EEG signals using multiple machine learning classifiers, including KNN, SVM, and an ensemble classifier, improving motor imagery task classification accuracy by 10% with MATLAB and Python.

Project Intern October 2023 - March 2024
Indian Institute of Technology (IIT), Bombay   *Bombay, India*

- **Project Title: Brain Tumour Detection** Implemented a Convolutional Neural Network (CNN) for Brain Tumor Detection which achieved a robust testing accuracy of 95%, demonstrating superior generalization ability in identifying brain tumors from MRI images.

- Utilized a pre-trained ResNet-50 model for brain tumor detection that achieved a high training accuracy of 99.50%.

- Conducted a comprehensive comparative analysis between CNN and ResNet-50 models.

PROJECTS

AI-Powered Cost-Effective Spirometer (Presented at ICASI 2025, Tokyo, Japan)

- **Final Year Project -** Developed a cost-effective, portable spirometer to measure key respiratory parameters (FVC, FEV1, PEF, FEV1/FVC) and diagnose lung disorders like asthma and COPD.

- Developed Flutter App and designed dual AI models using Python and TensorFlow: a 1D CNN+LSTM for time-series sensor data (93.73% accuracy) and a fine-tuned MobileNetV2 for flow-volume loop images (92.7% accuracy).

EMG based Robotics Claw (prosthetics)

- Secured second rank in department in pre-final year in Bachelor of Engineering.

SKILLS

- **Programming Languages:** Python, C++, Java, SQL, JavaScript, R, MATLAB

- **ML/AI Frameworks:** PyTorch, TensorFlow, scikit-learn, Hugging Face, NumPy, pandas

- **Cloud & Data Technologies:** Google Cloud Platform (GCP), AWS, MongoDB, DBMS

- **Development & Tools:** Git, REST APIs, ReactJS, HTML/CSS, Linux