

JAI PRIYADARSHI

IIT Bombay, Mumbai

☎ +91-6206923679

✉ jaipriyadarshi.iit@gmail.com

🌐 [Linkedin](#)

EDUCATION

Indian Institute of Technology, Bombay

Major - Material Science (B.Tech) | CPI : 7.94

2021 – 2025

Minor - Artificial Intelligence & Data Science

PROFESSIONAL EXPERIENCE

AI Engineer - Intern(BluSim Tech, Bangalore)

2024

- Developed **SleepNet**, **LSTM-CNN** architecture, to detect sleep pose with a classification accuracy of 85.74%
- Performed **Cepstrum** analysis of BCG signal & classify sleep pose using **ResNet** with an accuracy of 87.33%
- Drafted technical document for **Patent application** to be filed for HSA Class B medical device certification
- Implemented techniques from the **Research Paper** “A Piezoresistive Array-Based Force Sensing Technique for Sleeping Detection for SAS Patients (IEEE 2023)” to improve accuracy upto **91.17%**

RESEARCH EXPERIENCE

Diabetic Retinopathy Detection | Guide: Prof. Nirmal Punjabi

2025

- Applied **CLAHE**, **Top-hat** & **Black-hat** image processing to enhance fine retinal vessel contrast in images
- Trained **Swin Vision Transformer** using **focal cross-entropy** to handle class imbalance in classification
- Achieved **91.3%** accuracy and **89.7%** precision on APTOS 2019 dataset, validated using ablation comparison

Hand Motion Detection | Guide: Prof. Prasanna Kumar S Mural

2024

- Design and 3D-print PVDF & Nylon-based triboelectric sensor for adaptive joint motion monitoring system
- Programmed **Arduino** to interface with piezo sensors, enabling accurate real-time signal capture and logging
- Used **LSTM** architecture model achieving an accuracy of **73%** in motion detection from processed signals

POSITION OF RESPONSIBILITY

AI Scientist (Rakshak, IIT Bombay)

2022-24

- Fine-tuned **YOLOv8** for aerial **object detection** of cars, humans, buildings using **DOTA** & **xView** dataset
- Performed letter & shape **recognition & segmentation** on the **SUAS** dataset using **DenseNet** & **U-Net**
- Leveraged **Gazebo**, **RViz** & **Cartographer** to simulate **SLAM**-based mapping & localization for robot

PROJECTS

Voice enabled Chat with PDFs | Self Project

2024

- Developed **LangChain**-based chatbot answering user queries through audio input using **Whisper** (OpenAI)
- Implemented **RAG** pipeline, **chunked** PDFs, generated **embeddings** & stored them in **FAISS** database
- Employed **LLaMA Scout** LLM & **Gemini TTS** for audio output; deployed using **Hugging Face Spaces**

Hybrid Customer Churn Prediction Algorithm | Course: IE506 Machine Learning

2024

- Performed **EDA** on Telecom-Customer-Churn dataset to extract insights driving customer churn prediction
- Implement **Logit Leaf** (a hybrid decision tree & logistic regression model), resulting in **AUC** score of **0.79**

Conformal Time-Series Forecasting | Course: IE643 Deep Learning

2024

- Implement "Conformal Time-Series Forecasting" to generate 2000 **static** & **time-dependent** datapoints
- Obtained a **Coverage** vs. **Horizon** plot for CF-RNN, MQ-RNN, and DP-RNN using Stock market dataset

Brain Tumor Detection | Self Project

2023

- Developed **CNN** model to detect brain tumor using Kaggle **MRI** dataset with **4,600** images, Leveraged transfer learning & **fine-tuned pre-trained MobileNet**, achieving an accuracy of **93.72%** on test dataset
- Used **Gradio** to **deploy** the ML model, which can accurately classify MRI images in real-time efficiently

TECHNICAL SKILLS

Programming	Python, C++ , MATLAB, LaTeX , R, SQL, Arduino
Tools	GitHub, Jupyter, Google Colab, Gradio, VS Code, Bash
Libraries/Frameworks	NumPy, Pandas, Matplotlib, Keras, Scikit-Learn, PyTorch, TensorFlow, OpenCV, SciPy, XGBoost
Relevant Courses (IIT-B)	Deep Learning - Theory and Practice , Machine Learning, Medical Image Computing, Data Analysis and Interpretation , Computer Programming and Utilization , Probability and Stochastic Processes

EXTRACURRICULAR

- Secured INR 50,000 grant under IDEAs Cohort 8, IIT Bombay to validate AI-based hairstyle trial startup
- Volunteered with Abhyuday, IIT Bombay, providing **80+** hours of free teaching to underprivileged children