Abhijat Bharadwaj

Website: keymii.github.io | GitHub: github.com/keymii

bharadwaj.abhijat@yahoo.com | +91 9315457956 | Mumbai, Maharshtra, India

Profile: Software Developer, Signal Processing and AI/ML Engineer

Professional Experience

Full Stack Developer   **Trubuddyy Solutions Pvt. Ltd.**   Jul 2023 – Aug 2023
- Developed a mentor **search system** with best match sorting for using weighted **fuzzy string matching**
- Automated **Zoom** meet scheduling, **Whatsapp** and **SMS** reminders using **Twilio**, and **Stripe** Payments

Frontend Developer   **Application Software Centre, IIT Bombay**   May 2023 – Jul 2023
- Engineered a **micro-frontend architecture** enabling independent development teams to work for **MyIITB**
- Developed **support for 5+** JavaScript frameworks, including Angular, React, and SystemJS using **Single-SPA**

Education

Indian Institute of Technology Bombay   Graduating: 2026
- B.Tech and M.Tech (Dual Degree) in Electrical Engineering   Cumulative Grade (CPI): [7.86/10]
- Specializing in Communication and Signal Processing   Last Semester (SPI): [9.00/10]
- Minor Degree in Computer Science and Engineering

Technical Projects

Musical Information Retrieval from Guitar | Guide: Prof. Preeti Rao   Aug 2024 – Present
- Analysed DET and RoC for multiple audio **event detection algorithms** achieving approx **98%** True Positives
- Created a **custom dataset** for **signal processing** and **classification** of distinct guitar playing techniques

Cross-Domain Generalization using Wavelets | Guide: Prof. Vikram Gadre | Report Link   Sept 2024
- Developed a **57% more efficient** CNN equivalent using **Wavelet Scattering** for **invariant** feature extraction
- Reduced multi-layer CNNs to **3-layer** architecture with **interpretable** intermediates for cross-domain classifiers

MongoGBackup | DevCom, IIT Bombay | Project Link   Jul 2024
- Created a **PyPI** Python **library** for hashed, compressed and **encrypted** MongoDB backups on Google Drive
- Deployed a **cron job** to schedule backups on production database with **15,000+** No-SQL records per day

Mess-I: Mess Digitalization System | DevCom IIT Bombay | Project Link   May 2023 – Apr 2024
- Led the development of the **official** mess management system of IIT Bombay with **10,000+** daily active users
- Deployed the system in **14** out of **16** hostels, in **20+** devices, recording **4,000,000+** meals and **16K+** users

Positions of Responsibility

Overall Coordinator   **DevCom, IIT Bombay**   Apr 2024 – Present
- Led a team of **30+ designers and developers** to maintain and enhance IIT Bombay's digital infrastructure
- Improved **server reliability** and achieved **40% increase** in server up-time by efficient resource management
- Developed an **nginx** controlled private **documentation** system for **5+ projects** for effective knowledge transfer

Project Lead   **DevCom, IIT Bombay**   Apr 2023 – Mar 2024
- Spearheaded the **development** of Mess-I, InstiApp, and MyIITB portal, crucial for **12,000+ people**
- **Improved** code and production **maintainability** by **35%** by enforcing better development practices
- Streamlined the **app release** process, standardized **versioning**, and integrated **Sentry** for **remote logging**

Technical Skills

Development:
     Proficient: Dart, Flutter, Python, C++, React, JavaScript, Django, Flask, Micropython
     Familiar: OpenCV, NumPy, TypeScript, NextJS, Angular, Vue, MATLAB, Bash, JAVA, Soot,
DevOps: Umami, Sentry, New Relic, Proxmox, Docker, Linux, Algolia, Elastic search, MongoDB, AWS, GCP
AI/ML tools: LLaMa-2, YOLO, FAISS, Chain-Lit, Langchain, Scikit-Learn, Torch, Keras

Extra Curriculars

- **Awarded** with "Excellence in Teaching Assistantship", troubleshot XServer and WSL setup for **200+ students**
- Achieved **2nd position** in inter-hostel stage play and street play competitions in academic year 2022-23
- Represented IIT Bombay in the dramatics contingent in the **Inter-IIT** Cultural Meet 5.0, scoring 2nd overall