Muhammad Kifayathullah

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Summary

Innovative Pre-final year Integrated M.Tech Software Engineering student with research experience in AI, machine learning, signal processing, and NLP. Published few papers, including work on Carnatic music analysis and deep learning. Proficient in Python, C++, TensorFlow, and Librosa, with expertise in prompt engineering and audio feature extraction. Skilled problem-solver with a passion for advancing AI research and collaborating on impactful projects.

Education

Vellore Institute of Technology, Chennai Campus　　　　　　　　　　**Sept 2021 – Jul 2026***
Master of Technology (Integrated), Software Engineering　　　　　　　　　　**CGPA: 8.7**

- *Relevant Coursework:* Machine Learning, Software Project Management, Problem Solving and Object-Oriented Programming, Web Technologies.

Asan Memorial Senior Secondary School　　　　　　　　　　**Jun 2007 - May 2021**

- 12th Grade, CBSE Curriculum - **90.8%**
- 10th Grade, CBSE Curriculum - **84.8%**

Work Experience

Angular Developer Intern　　　　　　　　　　**Nov 2023 – Dec 2023**
Thrinaina Informatics

- Developed new pages and Angular components for the FaMeTN e-commerce platform for MSMEs in Tamil Nadu, improving user experience and functionality.
- Implemented multi-level search filters to enhance search precision and streamline user navigation.
- Designed responsive layouts across the site, utilizing Angular Material for pagination and maintaining design consistency.

Machine Learning Intern　　　　　　　　　　**Sep 2023 – Oct 2023**
InfoAid Tech

- Worked on 2 real time problem statements (Credit Fraud Detection, Movie Recommendation).
- Performed data analysis and trained traditional machine learning models (KNN, Logistic Regression, GridSearch).

Skills

- **Language:** Python, Java, JavaScript, TypeScript, C, C++, C#
- **Databases:** MySQL, Oracle SQL, Firestore, MongoDB
- **AI/ML:** Scikit-Learn, Keras, TensorFlow, Librosa, NLTK, OpenCV, PyTorch, NumPy, Matplotlib
- **Web Development:** HTML, CSS, JavaScript, React, Angular, Back-end Development (Express.js, Node.js)
- **Office Tools:** Proficient in Word, Excel and PowerPoint

Projects and Publications

- **Carnatic Raga Recognition using Deep Learning Techniques:** Awarded the Best Paper at the IRCCTSD'24. This research involved using signal processing techniques (Mel Frequency Cepstral Coefficients) to simulate human music perception and training an LSTM model to classify 96 different rags from time-series audio data, achieving and accuracy of over 96%.
- **Automated Tonic Identification:** Research paper presented in HITA STEMRS 24 conference. It involved audio signal processing to extract chroma stft features and train various deep learning models (CNN, LSTM, BiLSTM) to predict the pilot (tonic) pitch of the song.
- **Parallel Processing and Analysis of Logistic Regression and CNN Using OpenMP and CUDA in Python for Chest X-ray Pneumonia Detection:** Presented the paper in IHCSP 24 confernece. Developed and evaluated parallel implementations of Logistic Regression and Convolutional Neural Networks (CNNs) for automated pneumonia detection from chest X-ray images. Demonstrated significant reductions in training time and enhanced accuracy for large-scale medical image datasets, emphasizing real-time diagnostic potential in healthcare applications.
- **Trakit:** Designed and developed a collaborative to-do list android app, where users can create rooms with tasks assigned to everyone, using Java and Firebase.
- **VIT Marketplace:** Designed a stall management app using Figma, optimizing user experience and backend using Express and MongoDB Atlas.
- **Eccho – Podkast AI:** An OpenAI powered podcast summarization tool that takes in an audio file and generates transcript, summary and similar podcasts and a cover art for the podcast. Build with GPT 3.5, GPT 4, DALL-E 3 for WINUI3 framework as a native app for windows in C#.

Additional Experience

Microsoft Innovation Club, VIT Chennai *[Student Community]*

- **Web Development Co-Lead**   **Nov 2023 - Apr 2024**
  Ideation of multiple project ideas, task allocation and management of contributors.
- **Member**   **Mar 2023 - Nov 2024**
  Contributing to VIT Marketplace app design and backend for the app using ExpressJS and MongoDB Atlas.

Hackathons

- **Krypthon 2023 – 1st Runner Up –** Won ₹50,000 for designing the best expense tracker solution, and came 1st in the UI/UX category.
- **ACM UI/UX – 1st Runner Up -** Won best UI/UX design for a modern shopping app at an event hosted by ACM-W Chapter.
- **Innovate Carlo Rino – UPM UI/UX Hackathon – Top 20 –** Came in Top 20 in the international UI/UX hackathon conducted by Universiti Putra Malaysia.

Volunteering

- Volunteered organizing an online UI UX hackathon named PixelCraft. Coordinated with 60+ participants for a 16-hour overnight event.
- Volunteered in organizing an innovative offline hackathon (Not-A-Thon) with participants from all over the state.