Kriyasri Harikrishnan

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EDUCATION

Vellore Institute of Technology, Chennai Campus <div align="right">Tamil Nadu, India</div>
Integrated M.Tech in Software Engineering <div align="right">Sep. 2022 – Jun. 2027 (Expected)</div>
- **CGPA: 8.96**

Relevant Coursework: Data Structures & Algorithms, Java Programming, Database Management Systems, Operating Systems, Software Engineering, Machine Learning, Cloud Computing, Artificial Intelligence

EXPERIENCE

Research Intern - Crowd Simulation & Predictive Modelling <div align="right">Hybrid</div>
Centre for Cyber Physical Systems (CCPS), VIT Chennai <div align="right">May 2025 – September 2025</div>

- Created **behaviourally informed** synthetic crowd datasets by designing & simulating four distinct overcrowding scenarios in **Pathfinder**, modelling **age-based speed variation**, **group movement**, and **panic-induced congestion** for predictive crowd analysis.
- Developed regression and classification models based on **Fruin's Level Of Service (LOS)** to predict crowd density and risk levels using motion features, achieving up to 99.62% R^2 and 99.14% classification accuracy, and verified with OOD-testing.
- Performed **ablation studies** to quantify the impact of age & group behaviours on model performance; published in *Results in Engineering* (Elsevier), 2025. **DOI: 10.1016/j.rineng.2025.108210**

PROJECTS

Bluetooth Low Energy (BLE) Based Attendance System <div align="right">⭘ Repo</div>
Flutter, Firebase, BLE, Google Maps API, Google Sheets API, GCP
- Developed an end-to-end BLE-powered attendance system with **proximity-based** attendance using teacher peripheral and student central communication modes.
- Implemented multi-layer verification including **device binding, biometric authentication, and location validation** to eliminate proxy attendance.
- Built a Flutter application integrated with Firebase for **real-time attendance sessions, BLE signal handling, and structured attendance storage.**
- Developed **automated attendance export pipeline to Google Sheets** using GCP APIs, enabling session-wise record generation and reducing manual data handling.

ML-Powered Image-to-Product Finder Platform (Snap & Seek) <div align="right">⭘ Repo</div>
eBay API, AWS (Lambda, API Gateway, S3, Rekognition, Amplify), Google Cloud Vision, Boto3
- Developed a cloud-native web application that identifies products from user-uploaded images using user-selectable search pipelines combining **AWS Rekognition + eBay retrieval, eBay image search, or Google Cloud Vision web detection.**
- Built a React single-page frontend integrated with a serverless Flask backend deployed on **AWS Lambda** and exposed via **API Gateway** REST endpoints.
- Designed **modular backend services** to process images, generate search queries from detected labels, and aggregate product results from external APIs.
- Implemented cloud workflows using **S3, DynamoDB, SNS, and CloudWatch**, including structured custom logging **(Watchtower)**, custom metrics, and monitoring for backend tasks.

VIT360 - One Stop Solution for VIT Needs   ⌨ Repo
Flutter, Firebase, ngrok, BeautifulSoup

- Developed a Flutter mobile app for VIT-C students with a question paper archive, scraped event listings, and academic resources integrated with Firebase for backend data storage.
- Implemented in-app PDF viewing, downloads, search & filter functionality, and integrated a live event feed via REST API (Ngrok-based development server).

TECHNICAL SKILLS

Languages: Java, Python, C/C++, SQL (MySQL), Dart, HTML, CSS, Javascript
App Development: Flutter, Android Studio
AI / NLP Tools: AWS Lex, Dialogflow, Mistral AI
Data Science & ML: TensorFlow, Pandas, NumPy, scikit-learn, Matplotlib, Seaborn, Mediapipe
Cloud Technologies: AWS Cloud, Firebase
Developer Tools: Git, VS Code
Tools & Platforms: Unity, Streamlit, Node-RED, Google Colab, Github, ClickUp

ACHIEVEMENTS & CERTIFICATIONS

- **Top 10% Performer** in C&A Club, IIT-G's **Summer Analytics '25 Bootcamp**   Jul. 2025
- **Top 5% Score** in **'Learning Analytics Tools'** course offered by NPTEL   Oct. 2024
- **2nd Place** in IEEE-RAS Data Science Kaggle Competition   Jan. 2023
- School-Level **1st Rank Holder** in Computer Science Board Examination (CBSE)   July. 2022
- **'Agile Scrum In Practice'** Certification from Infosys Springboard   Jan. 2025
- **'Data Analytics with Python'** Certification from NPTEL; Score - **82%**   Apr. 2024

EXTRACURRICULAR & COMMUNITY EXPERIENCE

- Reported **50+ bugs and proposed 25+ feature enhancements** for the **"BrainlyTools"** Chrome extension on GitHub developed for Brainly; guided new users in the **.in** domain through usage and created instructional PPTs for onboarding.

- **Head of Documentation, TechnoVIT'24**: Led the documentation team for the **QUBIT** division, managed event tracking and documentation for over **65 events** in Google Sheets, **automated submission deadline reminders via Apps Script**, and ensured accurate and timely submission of all documents.

- **Registration Team Member, Vibrance'24 and MidFest'23**: Assisted with participant registration through forms, event coordination, and on-site management.

- **Data Science Member, IEEE Robotics Automation Society (RAS) Club**: Participated in ideations for club events, and worked on collaborative projects on Facial Expression Recognition.

- **Senior Content Moderator & Leader, Brainly**: Ensured questions and answers posted to the platform adhered to community guidelines, assisted users with their queries, and **organized competitions and events** for 80+ moderators as a Leader.