

# Kriyasri Harikrishnan

📞 +91 8148712670 | 📩 kriyasri.harikrishnan@gmail.com | 💬 linkedin.com/in/kriyasri-harikrishnan | 🌐 github.com/Kriyasri-Harikrishnan

## EDUCATION

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### Vellore Institute of Technology, Chennai Campus

*Integrated M.Tech in Software Engineering*

Tamil Nadu, India

Sep. 2022 – Jun. 2027 (Expected)

- CGPA: 8.96

**Relevant Coursework:** Information & System Security, Computer Networks, Data Structures & Algorithms, Java Programming, Database Management Systems, Operating Systems, Software Engineering

## EXPERIENCE

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### Research Intern - Crowd Simulation & Predictive Modelling

Hybrid

*Centre for Cyber Physical Systems (CCPS), VIT Chennai*

May 2025 – September 2025

- 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

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### Bluetooth Low Energy (BLE) Based Attendance System

Repo

*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)

Repo

*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

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**Languages:** Java, Python, C/C++, SQL (MySQL), Dart, HTML, CSS, Javascript

**Frameworks & Development:** Flutter, Flask, React

**Data Science & Machine Learning:** TensorFlow, Pandas, NumPy, scikit-learn, Matplotlib, Seaborn

**Cloud & Backend:** AWS Cloud, Firebase

**Tools:** Git, GitHub, VS Code, Google Colab, Streamlit, Unity

## ACHIEVEMENTS & CERTIFICATIONS

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- **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 (CS) 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

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- **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.