

# Aakar Mutha

New York | <https://www.linkedin.com/in/aakar-mutha/> | (929)-691-4855 | [aakar.mutha@nyu.edu](mailto:aakar.mutha@nyu.edu) | Github | Website

## EDUCATION

**New York University, New York, United States** **May 2025**  
Master of Science in Computer Science GPA: 3.9

- Relevant Courses: Data Structures and Algorithms, Machine Learning, Operating Systems, Cloud Computing, Big Data

**Vellore Institute of Technology, Vellore, Tamil Nadu, India** **August 2022**

B.Tech in Electronics and Communication Engineering with Specialization in IoT and Sensors CGPA: 9.1

- Relevant Courses: Principles of Computer Communication, Image Processing, Deep Learning, Microcontroller and Embedded Systems, Artificial Intelligence with Python

## TECHNICAL SKILLS

- **Programming Languages:** Python, PHP, C, C++, HTML, CSS, SQL, JavaScript, Typescript, Shell Scripting, Java
- **Frameworks:** Linux, Docker, Kubernetes, AWS, GCP, CI/CD, MongoDB, MySQL, Flask, NodeJS, NextJS, Firebase, Git
- **Packages:** Magento, Laravel, Bootstrap, Agile, SonarQube, Jenkins, Pytest

## WORK EXPERIENCE

**Bajaj Finserv, Pune - SDE I** **July 2022 - July 2023**

- Reengineered and upgraded critical ecommerce services into a scalable microservices enabling **40% faster API response time**.
- Troubleshoot and optimized notification services based on business requirements resulting in a remarkable **cost reduction of 60%**.
- Containerized multiple applications and facilitated migration to Kubernetes **resulting in a 40% reduction in downtime**.
- Built the backend of a flagship product from conception to completion by collaborating with cross-disciplinary individuals.
- Transformed specifications through the implementation of agile methodologies into tangible deliverables to business teams and stakeholders.

**Bajaj Finserv, Pune - SDE Intern** **January 2022 - June 2022**

- Built individualized event management system dashboards utilizing the LAMP stack for various users and administrators to utilize from the beginning to end of their event planning process.
- Developed an ecommerce application with the MEAN stack and oversaw the end-to-end process.
- Generated reports and documents related to project specifications, status and activities, reviewed by major stakeholders.

## PROJECT EXPERIENCE

### Disk I/O Performance Analysis and Optimization.

C, C++, Multithreading, System Calls.

- Spearheaded a multifaceted project aimed at optimizing Disk Input/Output (I/O) performance, achieving an outstanding maximum **read speed of over 32,000 MiB/s for a 2GB file**, while leveraging C/C++ programming to meticulously assess cache effects, system call costs, and the impact of diverse block sizes, resulting in substantial throughput improvements and efficiency gains.

### Serverless Recommendation Chatbot using Amazon Web Services

API Gateway, LexV2, Lambda, S3, SQS, SES, EventBridge, DynamoDB, Opensearch, S3, CloudFormation, CodePipeline

- Developed a chatbot using Lex and Lambda to provide restaurant email recommendations to users based on their preferences utilizing AWS services like DynamoDB to store user preferences and Amazon OpenSearch for restaurant data indexing, Amazon SES for seamless email communication and Amazon S3 for reliable static website delivery.

### Person Re-identification and Tracking

Machine Learning, Python, ResNet-50, YOLO-v5, COCO dataset, MARKET1501 dataset.

- Implemented the ResNet-50 algorithm pre-trained on the MARKET501 dataset to detect the same person in the different parts of a video using YOLO-V5 to first make a custom dataset in real time with **75% precision**.

## PUBLICATIONS

### Human Activity Recognition on Accelerometer Data using Machine Learning Algorithms.

2022 IEEE World Conference on Applied Intelligence and Computing (AIC)

- Conducted a comprehensive comparative analysis of multiple algorithms on the WISDM dataset, categorizing activities into 6 classes. Applied the random forest algorithm, achieving robust performance with an average training accuracy of **88.88%** and an average testing accuracy of **88.63%** over 10 folds.

## LEADERSHIP EXPERIENCE

**IoT Community Club** **VIT, Vellore, Tamil Nadu, India**

**Events Head** **January 2021 - Dec 2021**

- Led a team of **50 members** to organize and execute various events and workshops related to IoT and other supporting technologies such as UI/UX design, Machine Learning, etc.
- Collaborated with other student clubs and organizations to co-host events and workshops, resulting in a wider reach and more diverse set of events. Spearheaded the planning and ideation of conducting a hackathon as the flagship event.