HARSHINI RAJA

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EDUCATION

Santa Clara University — Santa Clara, CA
Master of Science in Computer Science and Engineering — June 2025
Visveswaraya Technological University — Bengaluru, India
Bachelor of Engineering in Computer Science and Engineering — July 2020

TECHNICAL SKILLS

Languages: Java, Javascript, Python, SQL, HTML5, CSS
Distributed Systems: Kafka, Event-driven Architecture, Microservices
Frameworks: ReactJS, NodeJS, Playwright, ExpressJS
Runtime Environment & Deployment: node.js, JRE, Docker
Databases: Mongo DB, MySQL, SQLite
Softwares/IDEs: Visual Studio Code, Eclipse, Microsoft SQL Server, Android Studio, IntelliJ Idea
Cloud Platforms: AWS
Version Control: Github

WORK EXPERIENCE

Embit Technologies — Jan 2023 - Aug 2023
Full-Stack Developer — Bengaluru, India

- Implemented a product recommendation system using collaborative filtering and robust data structures, leading to a 7% increase in cross-sell opportunities on product pages.
- Developed an interactive customer review dashboard for front-end using React and Next.js, integrating a sentiment analysis model built with NLTK and scikit-learn, improving product rating accuracy by 5%.
- Applied Principal Component Analysis (PCA) to analyze 10+ product attributes, identifying 5 key features that accounted for 85% of variance in user comparisons, resulting in a 7% reduction in time spent on product selection.

Tata Consultancy Services — Jan 2021 - Feb 2022
Automation Engineer/Test Analyst — Bengaluru, India

- Aided in the creation and execution of automation scripts, leading to the execution of 2,000-5,000 test cases. This initiative contributed to an improvement in testing efficiency by 30% and decreased manual testing efforts by 50%.
- Employed Playwright to craft automation scripts in TypeScript. These scripts streamlined the data import from Excel sheets and ensured accurate functionality testing of banking applications, supporting a 25% enhancement in software quality within an agile framework.

Centre for Artificial Intelligence & Robotics, DRDO — Jan 2020 - May 2020
Android Developer / Project Trainee — Bengaluru, India

- Integrated Google's speech-to-text API and NLP techniques into a secure Android chat app, boosting user engagement and accessibility by 30% through voice recognition and intelligent search.
- Devised a robust and efficient Android application by utilizing Java, Android Studio, and machine learning techniques for speech recognition and text processing enhancing the user experience through voice commands and natural language interactions.

PROJECTS

Facial Recognition Project

- Developed a facial recognition system utilizing a dataset comprising facial images of 35 students in a class. Applied machine learning algorithms such as support vector machines (SVM), decision trees, KNN, and ensemble learning to meet specified constraints.
- Enhanced model performance by leveraging principal component analysis and linear discriminant analysis for feature extraction; implemented data cleaning and augmentation techniques, improving predictive accuracy by 35% and achieved 93% accuracy for 100+ testing images, ensuring swift and accurate recognition.

Distributed Message Queue System

- Designed and implemented a distributed message queue system inspired by Apache Kafka, enabling asynchronous communication via decoupled producers and consumers using Java.
- Utilized long polling for efficient message delivery, ensuring ordering and consistency with offset-based tracking, reducing duplication errors by 90%.
- Optimized scalability to process 100+ messages/sec with <200ms latency, leveraging partitioning, multi-threaded architecture, and deploying on Docker & AWS auto-scaling, maintaining consistency under a 50% traffic increase.
- Applied software design principles to ensure a modular, fault-tolerant architecture, implementing replication and leader election to achieve 99.9% uptime and seamless broker recovery.