Kiran Balasundaram Kuppuraj

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EDUCATION

University of Massachusetts Amherst — May 2027
Bachelor of Science in Computer Science — GPA: 3.82

Relevant Coursework: Data Structures & Algorithms, Software Engineering, Artificial Intelligence, SQL/NoSQL Databases, Computer Systems, JavaScript/TypeScript Programming Methodologies

Organizations: BUILD UMass Software Developer + Treasurer, PartyPilot Software Engineer (UMass AI Startup), Teaching Assistant (Intro to Python, Computer Systems), Undergraduate BioNLP/ML Researcher

TECHNICAL SKILLS

Programming Languages: Python, Java, JavaScript, TypeScript, C, C++, SQL
Cloud & Databases: Amazon Web Services (AWS), Azure, Firebase, Supabase, PostgreSQL, MySQL, MongoDB
Frameworks & Tools: Spring Boot, React, Node.js, Express.js, Next.js, Puter.js, Angular, Flutter, pandas, NumPy, scikit-learn, TensorFlow, Keras, PyTorch, FastAPI, Docker, Kubernetes, Postman, Git, Agile, Cursor, GitHub Copilot

EXPERIENCE

Software Engineering Intern - LeeYuen Housewares (OEM Manufacturer) — *June 2025 - Aug 2025*
- Shipped a demand forecasting pipeline with **Python**, **scikit-learn**, and **AWS**, improving SKU-level sales prediction accuracy to **82%** while reducing overstock by **15%** and lowering annual storage costs by **$20K**.
- Engineered a **React.js** + **Spring Boot** cloud-native microservice architecture, centralizing BOM, supplier pricing, and production timelines, reducing quotation turnaround by **30%** and accelerating OEM client delivery.
- Deployed **Dockerized**, **Node.js** microservices to benchmark competitor pricing across **10K+** SKUs, orchestrated on **AWS**, reducing scraping runtime by **40%** while improving accuracy of procurement insights.
- Scaled forecasting and competitor-pricing systems with **CI/CD** pipelines to support **5K+** daily users, adding monitoring and fault-tolerance that improved uptime from **95%** to **99%** and cut release cycles by **25%**.

Software Engineering Intern - Zyntra.io (Slack competitor startup) — *July 2024 - Aug 2024*
- Launched a real-time, distributed messaging architecture using **React.js, Node.js, MongoDB**, and **Socket.IO**; optimized for **2K +** concurrent users in an **Agile** team with weekly code reviews and **CI/CD** deployments.
- Integrated **REST** and **GraphQL** backend APIs, with secure blob URL handling and custom state synchronization, reducing render failures and API response issues by **35%** through improved debugging and testing.
- Implemented **JWT-based authentication** with token refresh, protected routes, and session expiration logic, decreasing auth-related errors by **60%** while maintaining secure access through **Git** version control.

Data Science Intern - TruBridge Healthcare — *Dec 2024 - Feb 2025*
- Executed multivariate exploratory analysis on **50K+** healthcare records via **pandas**, **NumPy**, **SQLAlchemy;** optimized ETL pipelines to handle scalable ingestion and transformation across multiple hospital systems.
- Modeled statistical relationships between hospital readmission rates and infection control KPIs using logistic regression and OLS analysis via **SciPy** and **statsmodels**, identifying high-impact predictors ($p \leq 0.01$).
- Owned end-to-end **ETL pipeline** on **AWS Lambda + S3**, ensuring operational excellence via error monitoring; optimized vectorized preprocessing to reduce runtime by **35%** and improve reliability for downstream analytics.

PROJECTS

AI Resume Analyzer - ⦿
- Built a **React.js + FastAPI** resume analyzer integrating **Claude** and **OpenAI APIs** on **AWS EC2**; applied machine learning-based **NLP** pipelines to achieve **92%** ATS accuracy, helping **5+** students pass resume screens.
- Developed serverless auth + encrypted storage with **Puter.js** and designed an **AI** critique pipeline, enabling secure, concurrent analysis of **100+** resumes in parallel while improving feedback consistency by **30%**.

Kapok (Volunteer Coordination App for Disaster Relief)
- Architected a **Flutter/Dart + Firebase** backend with offline-first sync, enabling **200+** volunteers across **10+** disaster zones to capture and upload **1K+** field reports daily, **tripling** data submission rate once reconnected.
- Engineered a distributed **Firebase** backend with offline-first synchronization, role-based access control, and MapBox-powered task tracking; coordinated **500+** relief operations daily with **40%** faster data sync.