

Keerthan Gopalakrishnan

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Full-stack Software Engineer with a year of professional experience building scalable systems and deploying LLM-based AI agents. Three years of experience in building backend and frontend systems during college internships and part-time work. I thrive on solving **technically challenging, high-impact problems**.

TECHNICAL SKILLS

Languages: Python, Java, JavaScript, C, C++, SQL, HTML/CSS

Technologies: Flask, Node.js, Kafka, MariaDB, React/Next.js, Supabase, REST, Spring Boot

Tools: Docker, Kubernetes, Digital Ocean, AWS/Azure, Terraform, Git, Linux

Domains: Applied AI Engineering, Backend Development, Full-Stack Development

EXPERIENCE

Kraftx.ai

Jan 2025 – Present

Founding Engineer (Software Engineer)

- **AI Voice assistants for healthcare RCM | LangChain, FastAPI, Python, NextJS, Terraform**
 - Developed human-grade AI agents handling eligibility and benefits verification, prior authorizations, accounts receivable, and denial management (Healthcare Revenue Cycle Management).
 - Developed a dedicated voice stack using LiveKit and Deepgram for text-to-speech (TTS) and speech-to-text (STT), and LangChain for LLM orchestration.
 - Improved **system accuracy and reliability** from pilot to production by experimenting with multiple voice stacks (Retell, Vapi) and incorporating effective architectural elements from their frameworks.
 - Achieved **sub-1.5s interaction latency**, meeting human-acceptable standards for real-time responsiveness.
 - Built a Python-based **LLM evaluation framework** with 30+ multi-turn automated tests combining rule-based and LLM-as-judge scoring, with Langfuse and Allure visualizations enabling sub-2-min, **regression-free prompt iterations**.
 - Built a **benchmarking framework** to compare multiple STT and end-of-turn (EoT) detection models, evaluating latency, accuracy, and false-trigger metrics to guide model selection for production-grade reliability.
 - Engineered a scalable backend platform using FastAPI, Next.js, Kafka, Celery, and Redis, with 15+ REST APIs, CI/CD (GitHub Actions), and Terraform-provisioned Azure Container Apps/VMs ensuring cloud-native, reproducible scaling.

IoTReady.co

Jul 2023 – Dec 2024

Software Engineer Consultant

- **Delivery Executive Invoicing App (BigBasket) | React, Frappe, MariaDB**
 - Developed a full-stack application for a leading grocery delivery platform, enabling transparent tracking of driver earnings, incentives, taxes, and deductions.
 - Designed and implemented over 15 interactive pages using React and integrated 10+ APIs to support core functionalities, delivering the project within 3 weeks to meet urgent business requirements.
 - Achieved significant adoption, with the application supporting over **100K+ active users** and around **2M views / month**.
- **IoT Edge Management Software (BigBasket) | Phoenix/Elixir**
 - Migrated IoT Edge Management Platform (Bodh) from Django to Phoenix/Elixir, optimizing it to handle 10,000+ devices with **40% faster response times** and improved throughput.
 - Enabled OTA updates by ID, batch, organization, and location, simplifying hardware tracking.
 - Achieved **100% test coverage**, fixing all test cases and enhancing system reliability.
- **Other Development Projects | React, Firebase, Supabase**

- Developed a football skill-tracking system for MatchFives (Spain) to analyze player skills and team performance, with automated improvement emails.
- Integrated Zoho with Supabase via Edge Functions and daily Cron Jobs for seamless data synchronization.

Neoscale.io

Oct 2022 – May 2023

Founding Engineer (Software Engineer)

- **Spends (iOS/Android) | Spring Boot, React Native, Plaid APIs**

- Built a bill-splitting app using Plaid and Splitwise APIs to fetch transactions and split bills.

Cisco

May 2018 – Dec 2018

Research Development Intern

- **Young Talent Development Program | React Native, Firebase, Arduino**

- Designed a cross-platform app with hardware integration to enable real-time location tracking for Alzheimer's patients, ensuring continuous monitoring and safety.
- Implemented geofencing technology to define safe zones, triggering automated alerts to caregivers and authorities for swift intervention when boundaries are crossed.

COLLEGE PROJECTS (MAJOR)

- **Benchmarking Microservices (Capstone Project) | K8s, Kafka, Redis, Memcached, Python**
 - Created an automated framework to measure and benchmark microservices architecture solutions.
 - Automate microservices call graph generation, services simulation stub, and benchmark data.
 - Demonstrated using Alibaba's Cluster Trace Program published data from production.
- **Distributed Load Testing | Kafka, Flask** – Testing a high load of requests on a web server; supports both tsunami and avalanche distributed load patterns.
- **NumPy for C++** – A linear algebra library for C++ (using C++)

ACHIEVEMENTS

- **CISCON (2025) | K8s, Kafka, Python, Cloud** – Presented the capstone project (titled *Trace_Driven_Framework_for_Generating_Realistic_Synthetic_Microservice_Interactions*) at CISCON 2025, demonstrating trace-driven modeling and benchmarking of cloud microservice workloads.
- **Hallaton PES (2022) | Java, Maven** – Developed a Java Maven Dependency Checker that checks upgrade dependencies.
- **Silicon Rush - IEEE PES (2022) | HTML, CSS, Javascript, Django, Embedded C** – Built a smart socket that can switch on/off the socket remotely, along with calculating power consumed by each socket with which we can estimate the cost of electricity per socket, also built a smart gardening and watering solution.
- **Aikya Hackathon (2022) | HTML, CSS, Javascript, Django, Embedded C** – Built a product that could detect if a child is molested and call the concerned authorities.
- **The Amateur Scientist (2017) | Embedded C/Arduino** – Built a wedge type PS3 controlled car whose main aim was to knock other cars out of the ring.

EDUCATION

PES University

2021 – 2025

Bachelor of Technology in Computer Science, CGPA 8.75