

VIJAY MADHAVAN

STAFF ENGINEER

CONTACT

+971506790461
vijay.manghat@gmail.com
<https://www.linkedin.com/in/vijaymadhavan/>
<https://github.com/vijaymadhavan>
vijaymadhavan.dev
Abu Dhabi, UAE

SKILLS

Backend: Python, FastAPI, Django REST Framework, Flask, Node.js, Express, REST APIs, GraphQL

AI & Agent Systems: Google ADK, LLM Agents, Tool Execution, Session Management, SSE Streaming, Conversational Analytics

Data & Storage: PostgreSQL, MongoDB, DuckDB, Redis, AWS S3, Data Warehouse Systems

Cloud & Infrastructure: AWS (EC2, RDS, Lambda, SQS, SNS, VPC, ELB), Docker, Terraform, Nomad, Consul, GitHub Actions, CI/CD

Observability: Datadog, profiling, logging, Sentry

Security: Okta, authentication, authorization, permissions, Snyk, SonarCloud

Frontend (Hands-on): Vue 3, Next.js, React, TypeScript, JavaScript

EDUCATION

Master of Computer Applications

College of Applied Science(IHRD), Palakkad, Kerala, India
2011-2014

Bachelor of Computer Science

College of Applied Science(IHRD), Edappal, Kerala, India
2008-2010

PROFILE

Staff Engineer with 10+ years of experience building enterprise platforms, high-performance APIs, distributed systems, and cloud-native services. Experienced in building agentic AI applications, real-time conversational systems, and centralized data platforms for large-scale analytics. Strong expertise in Python, FastAPI, Django, Node.js, PostgreSQL, and AWS, with hands-on experience in infrastructure automation, CI/CD, and production observability. Proven track record of translating complex business requirements into scalable, secure, and maintainable solutions while collaborating across engineering, product, and business teams.

WORK EXPERIENCE

Staff Engineer

SenseHawk MEA

2021-Present

- Built backend capabilities for Naavix, an agentic AI platform integrated with SenseHawk, enabling clients to query large-scale solar project data through natural-language conversations and receive real-time insights.
- Designed specialized AI agents using Google ADK for project management, forms, geospatial analysis, summaries, and task generation, with persistent user- and resource-scoped session state.
- Engineered SSE-based real-time streaming with session management, cancellation, back-pressure, and resilient error handling for interactive AI conversations.
- Built and supported a centralized data warehouse that continuously synchronizes and consolidates structured data from multiple SenseHawk modules for cross-module analytics and reporting.
- Designed and optimized high-performance REST APIs and backend services using FastAPI, Python, and Node.js, focusing on scalability, maintainability, and clean architecture.
- Improved production performance and reliability using Datadog profiling and monitoring to identify API bottlenecks and optimize critical services.
- Implemented CI/CD and infrastructure automation using GitHub Actions, Terraform, and HashiCorp tooling, supporting reliable and repeatable deployments.
- Collaborated with product, frontend, and engineering teams to deliver production-ready features while mentoring junior engineers and leading code reviews to maintain engineering quality.

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EXPERTISE

- Backend & Distributed Systems Architecture
- Scalable API & Microservices Design
- Agentic AI & LLM Application Development
- Data Platforms & Warehouse Integration
- Cloud-Native Architecture & AWS
- Infrastructure as Code & CI/CD Automation
- Production Observability & Performance Optimization
- Authentication, Authorization & Platform Security
- Technical Leadership, Mentoring & Code Quality

LANGUAGES

English: Professional proficiency

Malayalam: Native

WORK EXPERIENCE

Senior Software Engineer

SenseHawk India Ltd

2017-2021

- Developed a user onboarding and access management platform supporting account provisioning, permissions, and user lifecycle operations.
- Designed AWS-based image processing infrastructure using Pix4D SDK and EC2 to automate large-scale solar imagery processing and overcome local compute constraints.
- Developed Python-based microservices and backend applications for platform automation, ad-hoc processing, and user management, integrated with Okta for identity and access management.
- Designed and implemented user activity and event-driven backend systems, integrating AWS services including RDS, Lambda, and SQS, along with Chargebee and Hookdeck.
- Led and mentored junior developers, conducted code reviews, and coordinated delivery through Agile sprint planning and cross-functional collaboration.

Full Stack Developer

Mitsogo Technologies Pvt. Ltd

2015-2017

- Developed and maintained web applications and backend services based on product and business requirements.
- Collaborated with product and engineering teams to analyze requirements, define technical solutions, and deliver features within project timelines.
- Diagnosed and resolved application defects, improving stability, reliability, and maintainability.
- Participated in code reviews and continuously improved engineering practices, implementation approaches, and code quality.