

# RAMNARAYANAN VANNIA SAMY

Senior Software Engineer | Cloud-Native Applications | AI Systems | AWS & Azure Expert

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## Summary

Software Developer with 6+ years of experience in building cloud-native applications and production-grade AI systems. Proficient in developing large-scale, event-driven architectures, integrating agent workflows, and deploying secure, scalable solutions. Demonstrated success in prompt engineering, vector search, AI system evaluation, and multi-agent orchestration. Adept in AWS, Azure, Python, and Rust.

## Key Achievements

### Scalable, Multi-agent AI chatbot

Designed and deployed a production-grade chatbot with RAG, function calling, and goal-directed workflows using Autogen and OpenAI APIs and multi-agent orchestration.

### Azure gateway NSP Integration

Integrated NSP with existing complex auth flows; led design, cross-functional collaboration, and production readiness through rigorous testing.

### Incident resolution and team autonomy

Implemented intelligent routing for GWv1/GWv2 incidents, reducing manual triage by auto-transferring 235+ Sev2/Sev3 ICMs and improving DRI efficiency.

## Experience



### Microsoft

#### Senior Software Engineer

Boston, Massachusetts

05/2022 - Present

- Developed and deployed cloud-native, distributed systems on Azure handling millions of global requests, ensuring 99.99% uptime.
- Contributed to refactoring core gateway components and added granular telemetry, improving system observability and reducing on-call debugging.
- Led CI/CD automations for Kubernetes-based environments, enhancing deployment reliability and cutting release times by 50%.
- Collaborated cross-functionally to integrate network security perimeters and data flow protections.
- Authored self-service tools and docs enabling efficient onboarding and independent debugging for broader teams, reducing support requests by 40%.



### Elevance Health

#### Senior Developer

Atlanta, Georgia

07/2019 - 05/2022

- Built a secure, scalable consent management platform using React and AWS (Fargate, QLDB, DocumentDB) with token-based auth, API Gateway, and fine-grained access controls supporting thousands of concurrent healthcare ops.
- Cut API latency by 50% through concurrency tuning, warm Lambda pooling, and performance optimization.
- Built Lambda toolkit to reduce new service deployment time, saving 120+ dev hours quarterly. Deployed toolkit to Artifactory for broader team adoption.
- Set up full-stack testing, CI pipelines, and telemetry using Postman, CloudWatch, and internal dashboards.



### University of Illinois Chicago

#### Research Assistant

Chicago, Illinois, United States

01/2018 - 07/2019

- Studied d3.js to build a QGIS-powered web tool to visualize cancer prevalence across Chicago, enabling data-driven insights for ward members.
- Developed a Unity-based mobile rehab game for stroke therapy; optimized builds and performance in constrained environments.

## Projects

### AI-Powered E-Commerce Application (Python)

Boston, Massachusetts

- Studied cutting edge Gen AI tools and designed a multi-agent chatbot using Autogen and OpenAI APIs with RAG, goal planning, memory, and feedback loops.
- Engineered dynamic prompt systems with JSON schemas, function calling, and real-time DB inputs.
- Built a cost-efficient GenAI stack with retries, moderation, prompt versioning, and token usage enforcement via AgentOps.
- Implemented hybrid semantic search with vector DBs (DuckDB) and optimized embedding strategies.
- Deployed scalable GenAI services with CI/CD (GitHub Actions), RabbitMQ, and Celery on Fly.io.

### AI Pac-Man Game (Python)

Chicago, United States

- Developed a self-playing Pac-Man game using a CNN model trained on 2 hours of data, leveraging MobileNet for training.

## Education



### University of Illinois Chicago

M.S., Computer Science | GPA: 3.95 / 4.0

Chicago, United States

05/2017 - 05/2019



### Anna University

B.E., Computer Science and Engineering | GPA: 8.5 / 10.0

Chennai, India

05/2013 - 05/2017

## Skills

AWS • AWS Lambda • Azure • C/C++ • C# • Celery • CSS • Dart • Dataflow • Docker • Fargate • GitHub • Grafana • HTML • IoT • Java • JavaScript • JSON • Kubernetes • Linux • Postman • Python • PyTorch • QGIS • RabbitMQ • React • Rust • DuckDB • SQLAlchemy • TypeScript • Unity • Wireshark • GitHub Actions • Node.js • Microservices • Gateway