Santa Clara, California
+1 (669)-268-4948
subr1729@gmail.com
linux-ram
subr
cyIYeloAAAAJ
U.S. Permanent Resident

Ram Subramanian

Principal Engineer, Agentic AI

Professional Summary

Principal AI Engineer with a PhD in Electrical Engineering, combining deep systems expertise with product ownership. Led end-to-end development of scalable AI products and agentic systems, from problem definition and architecture through production deployment. Delivered 18% improved threat detection and 25% greater system reliability at enterprise scale, while building production-grade agentic AI systems focused on scalability, cost, and user experience.

Experience

2026–Present **Principal Engineer, Agentic AI**, *Cogdroid Systems*, Santa Clara, CA
- Designed a multi-agent runtime for research and synthesis, streaming agent execution over SSE and persisting traces, reports, and presentation decks in PostgreSQL.
- Architected tenant-scoped agent state with copy-on-first-access isolation and dual-path inference, balancing response quality, latency, and compute cost.
- Re-platformed a hosted prototype into a containerized API/SPA/PostgreSQL stack with persistent state, restart resilience, and remote failover.

2024–2025 **Guest Teacher | Certificated Substitute**, *Fremont Union High School District*, Sunnyvale, CA
- Taught AP CS / STEM with data-driven methods → 15% higher AP exam scores (100+ students).
- Mentored research projects → 10+ regional STEM fair awards, 25% engagement increase.

2017–2023 **Senior Software Engineer (Product-Focused)**, *Cisco Systems – Enterprise Routing BU*, San Jose, CA
- Drove ML-driven network intelligence initiatives for $5B enterprise routing portfolio → adaptive threat detection
- Owned end-to-end development of ML network flow classification → 18% IDS/IPS accuracy gain.
- Optimized packet paths → eliminated bottlenecks, 25% downtime reduction in large deployments.
- Partnered with cross-functional DP/Marketing/QA teams; authored docs & unit test frameworks.
- Led global release validation → 35% fewer post-release defects.

2014–2017 **Research Scholar**, *Northeastern University – ML Lab*, Boston, MA
- Developed semi-supervised models for adversarial detection → ∼15% accuracy improvement.
- Applied ML to product quality, peer-review scoring, coronary artery disease diagnosis.

2016–2017 **Research Scholar**, *University of Naples – Future Comm. Lab*, Naples, Italy
- Designed mmWave/THz vehicular protocols → enabled 1 TB/journey data transfer.
- Evaluated real-time reliability for autonomous driving & UHD 3D mapping.

Education

Stanford Continuing Studies, *Stanford University*, Stanford, CA
Agentic AI for Product Leaders

Ph.D., Electrical Engineering, *Northeastern University*, Boston, MA
Connected Cars, Software Radio

Skills

Programming	Python ▪ C/C++ ▪ Bash ▪ Git
Agentic AI	Multi-agent systems ▪ RAG ▪ tool/function calling ▪ agent orchestration ▪ LLM evaluation
LLM Engineering	Model routing ▪ inference strategies ▪ PyTorch ▪ Hugging Face ▪ LoRA/QLoRA
AI Systems	Streaming/real-time AI ▪ API architecture ▪ PostgreSQL ▪ multi-tenant systems ▪ fault tolerance
Cloud & Production	AWS ▪ Docker ▪ Kubernetes ▪ CI/CD ▪ production AI deployment
Systems	Embedded Linux (Buildroot) ▪ ARM ▪ kernel tuning ▪ Linux performance profiling ▪ TCP/IP

Honors & Awards

Popular Choice Award – EN Hackathon 2021
IEEE Senior Member
Exemplary Reviewer (×2)
Best Research Award (×2)

Patents

- "Service Plane Optimizations with Learning-Enabled Flow Identification," US Patent No. US11777973B2, issued on Oct. 3, 2023.
- "An Intrusion Detection System And A Method Thereof", Gov. of India Patent No. 329897, issued on Jan. 22, 2020.
- "Millimeter Wave (mmWave) Radio Resource Allocation Scheme for Vehicle-to-Infrastructure (V2I) Communications," US Patent No. US10798755B2, issued on Oct. 6, 2020.

Defensive Publications

- "Identifying Vehicle Route based on User Activity", Technical Disclosure Commons, Published on Oct. 2, 2018.

Talks

- Ram, 2019: "A Quick Introduction to IDS/IPS using Snort" *Talkin' Security - July 2019, Silicon Valley Cyber Security Meetup* ▶
- Ram, 2018: "A mmWave Resource Allocation Scheme" *Interview at the Future Technologies Conference* ▶
- Ram, 2018: "My Take on Tiger Conservation in India" *Cisco AIM Chap. 4 Episode 1* ▶
- Ram, 2018: "I Love π" π *Day Talk*

Papers – Conferences

- Ram, Jeslin, 2020: "Shared Memory Enabled Service Plane Optimization" *COMSNETS*
- Ram, 2018: "A Resource Allocation Scheme for Multi-User mmWave Vehicle-to-Infrastructure Communication" *FTC*
- Ram, Eric, Ben, 2016: "State-Action based Link Layer Design for IEEE 802.11 Compliant MATLAB-based SDR" *DCOSS*
- Ben, Ram, 2015: "Implementing a MATLAB-based Self-Configurable Software-Defined Radio Transceiver" *CROWNCOM*
- Ram, Romer, Glenn, Jennifer, 2012: "Evaluating Crowdsourcing Participants in the Absence of Ground-truth" *NIPS* </>
- Smartdetect Project Team, 2010: "SmartDetect: An efficient WSN implementation for intrusion detection" *COMSNETS*
- Ram, Abu, Vijay, 2009: "A low-complexity algorithm for intrusion detection in a PIR-based Wireless Sensor Network" *ISSNIP*

Papers – Journals

- Angela, Ram, Marcello, & Kaushik, 2017: "Software-Defined Network Controlled Switching between Millimeter Wave and Terahertz Small Cells" *Arxiv*
- Ram, Ben, Eric, Rameez, 2016: "High-Level System Design of IEEE 802.11b Standard-Compliant Link Layer for MATLAB-based SDR" *IEEE Access* (∼**1K** software downloads) </>
- Yan, Romer, Glenn, Ram, Jennifer, 2014: "Learning from Multiple Annotators with Varying Expertise" *Machine Learning Journal - Springer* (∼**250** citations)
- Smartdetect Project Team, 2010: "Wireless Sensor Networks for Human Intruder Detection" *Journal of the Indian Institute of Science*