

Harihar Thapa Resume

HARIHAR THAPA

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LinkedIn: <https://www.linkedin.com/in/iamhariharthapa/>

Sanshar public repo: <https://github.com/bharihar400-collab/sanshar-lab-public> | H-1B | Open to SF/NYC hybrid or relocation

APPLIED AI ARCHITECT, COMMERCIAL

Applied AI systems builder with AWS networking/security support experience, cybersecurity and network engineering depth, and a live multi-agent AI lab called Sanshar. Strong fit for customer-facing AI architecture where discovery, prototype building, eval design, deployment reliability, and clear communication matter. I turn ambiguous operational needs into reusable systems, scripts, runbooks, proof artifacts, and workflows that can be explained to both technical and non-technical users.

TARGETED STRENGTHS

- **Agentic AI systems:** Built Sanshar Swarm, an event-driven multi-agent AI testbed using Codex/Claude peers, Discord Gateway events, source packets, dynamic routing, proof/read-back, and evaluation metrics.
- **Claude-style workflow craft:** Designed tool-use loops, Manager-Agent-Verifier packets, source-grounded decisions, read-back contracts, synthetic examples, eval/replay artifacts, and MCP/Discord surface patterns.
- **AWS and network security:** Support Engineer across VPC, Route 53, WAF, Shield, and Network Firewall; AWS Solutions Architect Associate; strong DNS, routing, firewall, VPN, Linux, and packet/path debugging.
- **Customer-facing communication:** Teaching Assistant, L2/team-lead support background, hospital IT operations, and production media network experience where urgency, uptime, and clear escalation mattered.
- **Multimodal/product sense:** Voice, image, A/V, attachment, chess/vision, and Discord surface prototypes with privacy gates, confidence reporting, and verifier loops.

SELECTED AI SYSTEMS PROJECTS

Sanshar Swarm – Multi-Agent AI Systems Testbed – Independent Builder / Architect

2026 - Present

Designed and built a local/live swarm testbed where specialized AI peers coordinate across machines, Discord, local files, and remote-access infrastructure. The project focuses on reliable collaboration rather than unverified “done” claims: each important input becomes evidence, each action has expected-vs-observed metrics, and each promised surface output needs read-back. Public architecture and synthetic examples are in the Sanshar repo linked above.

- Built event-driven Discord awareness with Gateway events, bounded channel scopes, source-packet records, cursor tracking, reaction/read-back proof, and no-polling live-state constraints.
- Designed Manager-Agent-Verifier packet loops with promises, expected metrics, observed metrics, postproof, reason codes, retickets, and handoff files.
- Created dynamic decision records across 101 runtime dimensions including language, modality, trust, privacy, tool selection, risk, freshness, memory scope, and autonomy level.
- Implemented proof-first safety gates for private surfaces, secrets, external mutation, camera/mic/screen capture, KG/canon/training promotion, service restarts, and high-risk actions.
- Built a secure remote-access and portfolio deployment path using AWS, DNS, TLS, per-IP rate limiting, WireGuard, Mac peer setup scripts, and proof bundles.
- Operated at high frontier-agent build intensity across multiple Claude Code and Codex environments, learning practical constraints around rate limits, context handoff, latency, memory pressure, and tool reliability.

Relevant technologies: Python, Discord API/Gateway, Codex, Claude, AWS, WireGuard, macOS launchd, JSONL event logs, eval harnesses, shell scripting, REST APIs, Git, Linux/macOS systems.

Medha Labs Chess, Vision, Voice, and Attention Policy

2026

- Built a prototype chess platform where LLM agents, human players, AI coaches, and AI judges interact through validated game state, python-chess-backed legal moves, replay, trust scoring, and hash-chained heritage.
- Designed Discord, voice, image, screen/OCR, A/V context, and attachments as structured surfaces with metadata, hashes, STT/caption candidates, language/content detection, confidence, and response gates.
- Built a dynamic attention/zoom policy for deciding when an agent should observe, probe, summarize, ask, act, escalate, reticket, or ignore noise.
- Created replay/eval scenarios for overlapping surfaces, stale context, false positives, false negatives, resource pressure, read-back failure, and missed promises.

PROFESSIONAL EXPERIENCE

AWS Support Engineer — VPC / Route 53 / WAF / Shield / Network Firewall

United States | Jul 2024 - Present

- Support customer cases across AWS networking and security services including VPC, Route 53, AWS WAF, AWS Shield, and AWS Network Firewall.
- Troubleshoot routing, DNS, firewall policy, security filtering, edge protection, and network connectivity issues by turning ambiguous symptoms into concrete packet/path hypotheses and checks.
- Build reusable troubleshooting notes, scripts, and workflows to reduce repeat investigation time and improve customer outcomes.
- Apply cloud security and reliability judgment across high-impact cases involving availability, misconfiguration, threat filtering, and service behavior.

Network Administrator — Montrose Hospital

Colorado | Mar 2024 - Jul 2024

- Supported hospital network operations across users, servers, wireless, endpoints, and infrastructure where uptime, privacy, change risk, and clear escalation mattered.
- Diagnosed connectivity, endpoint access, Wi-Fi, systems, and operational technology issues with clinical and administrative stakeholders.

University of New Haven — Teaching Assistant, Network and System Design

West Haven, CT | Sept 2022 - Present

- Helped design and support networking/systems labs covering routing, switching, firewalls, VMware, Windows Server, Unix/Linux, DHCP, DNS, Active Directory, backups, and recovery.
- Guided graduate and undergraduate students through setup, debugging, root-cause analysis, documentation, and repeatable troubleshooting workflows.

Dish Media Network — Network Engineer / Associate Broadcast Engineer

Nepal | Jul 2018 - Oct 2021

- Designed and supported Wi-Fi/wireless deployments, routing/switching, VPN/IPsec remote access, Linux/web infrastructure, and network security controls for production media services.
- Optimized Linux infrastructure for a high-traffic video application, increasing system bandwidth by more than 40%; built Python log-analysis automation that improved troubleshooting efficiency by approximately 30%.
- Maintained live broadcast systems with 99.999% uptime requirements across CATV, HD-SDI, Ethernet, satellite, optical transmission, encoders/decoders, A/V monitoring, archiving, and CPE testing.

EDUCATION AND CERTIFICATIONS

- **University of New Haven** — Master of Computer Science, Cybersecurity & Networks, GPA 3.94/4.00
- **Kathmandu University** — Bachelor of Engineering, Electrical and Electronics Telecommunication
- AWS Certified Solutions Architect - Associate | Cisco Certified Specialist - Enterprise Core (ENCOR) | CCNA | CompTIA Security+

TECHNICAL SKILLS

AI / LLM systems: Agent workflows, evaluation design, prompt/workflow design, tool-use loops, source-packet tracing, proof/read-back systems, Discord Gateway events, Codex, Claude

Cloud / systems: AWS, Azure AD, Windows Server, Linux, macOS, VMware ESXi, web servers, TLS, DNS, Terraform planning

Networking/security: TCP/IP, IPv6, DNS, VPN, IPsec, GRE, VRRP, HSRP, VLAN, VxLAN, OSPF, BGP, QoS, WAF, Shield, Network Firewall, Cisco ASA, Firepower, Palo Alto, Snort, Wireshark, tcpdump

Programming/automation: Python, shell scripting, PowerShell, REST APIs, Ansible, Git, CLI tooling, JavaScript, HTML/CSS, SQL/NoSQL, JSON/JSONL event logs