

Shyam Karthick VB

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github.com/ShyamKarthickSec Portfolio

Professional Summary

Graduate Computer Science (Cybersecurity) student at the University of Sydney (Distinction) and former Software Engineer at Bank of America with hands-on experience in enterprise-scale production systems and security engineering. Experienced in Linux-based environments, Oracle databases, CI/CD automation, secrets management, and resolving high-severity production incidents in regulated banking infrastructure. Strong foundation in secure SDLC, infrastructure reliability, threat-aware system design, and operational risk mitigation within large financial environments.

Education

University of Sydney

MS in Computer Science (Cybersecurity)

Feb 2025 – Feb 2027

WAM: 82 (Distinction)

Scholarships: Sydney International Student Award, Vacation Research Internship, Engineering Accelerator Scholarship

SRM Institute of Science and Technology

BTech in Information Technology

Jul 2019 – Mar 2023

GPA: 9.4/10 = 3.9/4 (High Distinction)

University Ranker, Founder and Ex-President: CHAT (Community of Hackers and Advanced Technologists), 300-member student tech community.

Experience

Research Intern (Cybersecurity & AI Safety)

Jun 2025 – Dec 2025

University of Sydney

- Developed and evaluated **AI-powered guardrail and defense frameworks** for autonomous systems; emphasized correctness, failure handling, and runtime validation.
- Built evaluation pipelines with strong focus on **logging, reproducibility, and documenting failures** to support iterative improvement and safe deployment.

Software Engineer

Jul 2023 – Jan 2025

Bank of America

- Built **MuleSoft- and Kafka-based APIs** and **Oracle-backed data pipelines** supporting core banking workflows used by **millions daily**.
- Implemented **CI/CD automation, HashiCorp Vault-based secrets management**, and delivered fixes for **P1/P2 security vulnerabilities** in production systems.
- Wrote and maintained **Linux automation scripts (Bash/Python)** for service checks and operational workflows; reduced manual intervention and improved reliability.
- Owned production changes end-to-end: testing/validation, deployment, monitoring, and incident resolution; maintained runbooks and troubleshooting guides.
- Awarded **Global Recognition Bronze Award** for high-impact production and security contributions.

Software Engineer Intern

Jan 2023 – Jun 2023

Bank of America

- Trained in MuleSoft, DevOps, Linux operations, Python automation, and database scripting; supported secure SDLC practices.
- Developed Python-based automation and monitoring scripts for production services, reducing manual operational workload by 70%+ and improving system response times.
- Assisted senior engineers during incidents, practiced structured troubleshooting and root-cause analysis in a fast-paced environment.

Summer Research Intern – Cybersecurity (Critical Infrastructure)

2022

Indira Gandhi Centre for Atomic Research (IGCAR)

- Developed detection and monitoring scripts to identify anomalous behavior in a high-availability, restricted research environment.
- Worked under strict operational procedures emphasizing correctness, auditability, and minimal blast radius.

Freelance

- Responsibly disclosed critical vulnerabilities, including to a **U.S. Department of Energy lab**; listed in Responsible Disclosure Hall of Fame. [US Govt official Acknowledgement](#)
- Identified security issues across multiple production systems (API, CI/CD, access control, insecure storage), and communicated fixes with clear repro steps.

Projects

ElderCare Assist AI

[GitHub](#)

- AI-powered assistive platform enabling patients, caregivers, and doctors to interact through **secure dashboards**, voice AI, and real-time monitoring.
- Implemented LLM-driven companions, emotion detection, and AI-generated health summaries with **privacy-first safety guardrails** and role-based access.

Shyam's AI Deep Research Agent

[Live Demo](#)

- Built a **multi-agent system** that performs structured deep research with critique and synthesis; designed for clear orchestration and debuggable execution.
- Emphasized observability (logging), failure handling, and reproducible outputs for stable user-facing operation.

AI Chatbot Portfolio

[Portfolio](#)

- Built an AI-powered chatbot portfolio using retrieval-based prompting and user-centric design to showcase projects.

Net-Detect: Intelligent Network Monitor

[GitHub](#)

- Built a Python-based monitoring tool to track network/system events in real time; implemented basic alerting and anomaly heuristics.

American Flight Webservice

[GitHub](#)

- Built and operated a **MuleSoft-based** web service integrating **SOAP/REST** APIs in a Linux environment with deterministic responses.
- Implemented structured error handling and input validation to ensure predictable behavior under failure scenarios.

Technical Skills

Programming: Python, Java (working), C, C++, JavaScript (basic)

AI & Agentic Systems: Multi-Agent Architectures, LLM Tool Calling, RAG, LangChain, CrewAI, MCP, OpenAI SDK, Hugging Face

Backend & Data: REST APIs, Kafka, MuleSoft, SQL, Oracle DB, Microservices, Authentication/Authorization

Security & Systems: Secure SDLC, API Security, CI/CD Security, Secrets Management, Threat Modeling, Networking, Linux

Enterprise Infrastructure & Operations: Linux Production Environments (UNIX-based systems), Oracle Database Integration & Querying, CI/CD Pipeline Management (Jenkins, Git), Secrets Management (HashiCorp Vault), Monitoring & Log Analysis (Splunk), Incident Response & Root Cause Analysis, Secure Deployment & Change Management, Distributed Systems Support (Kafka-based services)

Leadership

Volunteer, HackSydney Conference

2025

- Supported end-to-end conference operations, including coordination, on-site execution and post-event wrap-up.

Founder & President, CHAT

2021 – 2023

SRM Institute of Science and Technology

- Founded and scaled a cybersecurity community from 5 to **300+ members**; led national-level hackathons and awareness programs.

Awards & Recognitions

- Global Recognition Bronze Award, Bank of America (2023, 2024)
- 1st Place, University of Sydney Capture The Flag (CTF), out of 170+ teams
- Sydney International Student Award (2025)
- Engineering Accelerator Scholarship (2025)
- Top 5 Finalist, USYD & Microsoft CHAT & Hack Competition (2025)
- Vacation Research Internship Scholarship, University of Sydney (2025)
- U.S. Department of Energy Responsible Disclosure Hall of Fame (2024) [US Govt official Acknowledgement](#)