

SARTHAK SHAH

Machine Learning & Security Engineer

✉ shahsarthakw@gmail.com • coldboot.org
in linkedin.com/in/sarthak-shah-sos • github.com/matchcase

SUMMARY

Security Engineer with a strong foundation in **Threat Detection**, **Incident Response**, and **Cloud Infrastructure Security**. Experienced in designing and deploying security solutions across diverse environments, including **Microsoft Azure** and **Google Cloud**. Proficient in scripting languages like **Python**, **Go** and **Bash**, with demonstrated expertise in automating security processes and developing detection systems. Interested in applications of Generative Artificial Intelligence to Cybersecurity.

EXPERIENCE

Mercari, Inc. May 2024 - July 2024
Security Engineering Intern Tokyo, Japan

KEY SKILLS: Threat Detection, Incident Response, Terraform

- Worked as a part of the Threat Detection & Response team.
- Wrote and deployed programs for sensing network scans and analyzing firewall logs from offices all over Japan.
- Wrote log filtering and routing solutions and BigQuery views, and deployed them to the SOAR through Google Cloud PubSub using Terraform.

Google Summer of Code May 2023 - September 2023
Intern with the GNU Project Remote

KEY SKILLS: Operating System Development, Linux, Functional Programming

- One of the 2.2% of applications selected for the Google Summer of Code program.
- Worked on adding an interface for compile-time options to the Guix package manager.
- Gained experience in functional programming, build systems and reproducible environments. [Project Completion Report](#) and [Source Code](#).

High Performance Computing Lab, BITS Pilani January 2023 - May 2024
TA, System Administration Onsite

KEY SKILLS: System Administration, Networking, Incident Management, Ansible

- Worked as one of the Assistant System Administrators for the university's High Performance Computing cluster.
- Supported availability and capacity planning of the cluster, automated provisioning and system recovery using Ansible, handled network outages and system-level incidents on-call.

GeneNetwork November 2023 - January 2025
Software Developer Remote

KEY SKILLS: WebAssembly, NumPy, Data Visualization

Built scalable visualization tooling in WebAssembly for large genomic datasets for [GeneNetwork](#), a project under University of Tennessee's Health Sciences department.

EDUCATION & CERTIFICATIONS

University of Oxford January 2025 - July 2025
Recognized Student Oxford, United Kingdom

Studying and conducting research as a Recognized Student under the Department of Computer Science, University of Oxford in the fields of Cybersecurity and Deep Learning.

Birla Institute of Technology and Science, Pilani
MSc. Mathematics (Integrated, Hons.)
Minor in Computing and Intelligence

2021 - 2025

SKILLS

DevOps & SRE: Linux, System Administration, Google Cloud, Kubernetes, Terraform, Microsoft Azure, Automation, Scripting, Logging, Monitoring, Alerting

Cybersecurity: Threat Detection, Incident Response, Cryptography, SOAR, Change Management, Access Management, OSINT, DevSecOps, Fuzzing

Machine Learning: PyTorch, Scikit-Learn, NumPy, Pandas, LangChain, LangGraph, ChromaDB, Apache Spark, Finetuning, GRPO, MCP

Programming: Python, Go, Ansible, Scheme, Clojure, Bash, C/C++, CUDA, Fortran, WebAssembly, TypeScript, PHP

Communication: English, Japanese, Team Leadership

HIGHLIGHTED PROJECTS

langcheck Multiple contributions to langcheck, an LLM evaluation framework

Yui LangGraph-based Multimodal Chatbot with Long-Term Memory & Tools

Plyppy A Boot Animation Creator for Linux

SeerGPT An LLM-powered Tarot Reader

TileEx A Tiling Pattern Extractor written in Go

Parameterized Packages for GNU Guix GSoC '23 Project adding Compile-Time Options to GNU Guix, a Transactional Package Manager

GWAS Plotter GWAS Plotter that can do Manhattan Plots and QTL Plots

LiteBBS An Unofficial Bulletin Board for BITS Pilani, hosted on Microsoft Azure.

(And many more on my [GitHub Page](#))

EXTRACURRICULARS

Society for Open Software
President

June 2022 - Present

Organized and spoke at six workshops that covered git, dual-booting, networking and shell scripting, and organized and hosted two CTF competitions. Led the CTF team for a year, reaching a national rank of 25.

Journal Club

2022

Editor-in-chief

Served as the Editor-in-chief for the annual Freshman magazine, *Whisper in the Woods*.

ACHIEVEMENTS

National Supercomputing Mission GPU Hackathon
Participant

2022
IIT Bombay

A Supercomputing GPU Hackathon organized by Nvidia.

Winner, IIT Goa's Cepheus CTF

2023

Runner up, IIT Hyderabad's Cipher-Cracking Contest "Enigma"

2023

Rank 3, NCFE-NFLAT

2017-2018

Gold Medalist, Queen's Commonwealth Essay Writing Competition

2015

LINKS

[GitHub](#) • [LinkedIn](#) • [Personal Website](#) • [Blog](#)