

VEDANTA BARMAN

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EDUCATION

PES University
B-Tech, Computer Science

Electronic City, Bangalore, India
August 2023 - May 2027

SKILLS

Programming Languages:	Python, C++, Java, JavaScript, TypeScript, Bash
Web Development:	React, Node.js, Express.js, Flask, REST APIs
Systems & Tools:	Linux, Docker, SQL, DBMS, DSA, Virtualization, Cybersecurity, Infrastructure Management, Git

PROJECTS

Co-Evolutionary Framework for Malware Analysis

- **Designed a co-evolutionary adversarial machine learning framework** in Python to simulate and analyse the arms race between malware generation and detection.
- **Developed a dual-engine architecture** featuring independent modules to simultaneously evolve evasive malware variants and generate adaptive defense mechanisms.
- **Engineered a central orchestrator** utilizing a continuous feedback loop to iteratively optimize both attack evasion techniques and detection accuracy.

Self-Hosted Infrastructure & Network Administration

- **Architected and maintained self-hosted services** using Docker and Docker Compose to deploy and isolate network services.
- **Deployed a network-wide DNS blackhole** and managed local DNS routing to improve network security and block malicious telemetry.
- **Provisioned headless Linux game servers** with port forwarding, firewall rules, access controls, administration scripts, and system monitoring.

BookNook

- **Developed a full-stack e-commerce bookstore application** utilizing the MERN stack (MongoDB, Express.js, React.js, Node.js) to facilitate the browsing, searching, and purchasing of books.
- **Designed an intuitive frontend interface** using React.js to deliver a seamless and engaging user experience for book discovery.
- **Engineered a robust backend architecture** with Node.js and Express.js to ensure reliable transaction processing and provide secure administrative controls for store management.

VidStream

- **Built a video review and streaming platform** inspired by YouTube, utilizing a Python Flask backend and a MySQL relational database.
- **Implemented core interactive features**, including secure user authentication, video uploading with automated thumbnail generation, and a dynamic commenting system supporting @ mentions.
- **Created a comprehensive administrative dashboard** to streamline user management and facilitate efficient content moderation.