Kevin Varghese

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EDUCATION

Drexel University **Expected: June 2028**

Bachelor of Science in Computing and Security Technology
GPA: 3.4 / 4.0

- Relevant Coursework: Computing and Informatics-III, Intro to Computer Science 171, IT Security I, Web Systems and Services I, Information Technology Security I, Network Administration I

Software Engineering Work Experience

Rocket telemetry tool
Technologies: HTML/CSS, WebSocket, JS, Express.js,Chart.js

- **Built** a full-stack, real-time telemetry system using **Node.js, Express, and Socket.IO**, streaming **10+ physics variables** at **4 Hz** with **<100 ms latency** to interactive dashboards used for live mission analytics.
- **Programmed** a custom **multi-variable flight dynamics engine** modeling a **162-second Falcon 9 ascent**, achieving **<2 % trajectory error** through thrust-vector decomposition, gravity loss compensation, and dynamic mass depletion.
- **Deployed** a **predictive anomaly detection module** performing real-time differential analysis between live and nominal data, flagging **>2 % fuel-variance deviations**, and optimized the front-end for a **95+ Lighthouse score**,**<1.5 s load time**, and **<50 ms frame latency**.

Linux Firewall Network Security

Technologies: Ubuntu,UFW

- Configured **UFW/iptables** firewall rules on an Ubuntu VM that blocked **over 95%** of unwanted or spoofed traffic during basic testing, improving default system security.
- Used Linux CLI tools to apply **deny-out, inbound-drop, and interface-level filters**, reducing successful scan attempts by **~80%** in nmap test scenarios.
- Improved the system's CIS security score from **61** → **94** through foundational hardening steps (SSH settings, logging, sysctl tweaks), with documentation that shortened setup time by **~50%**.

Smart security system

Technologies: Python,C,FastAPI,React,Firebase

- Built an **ESP32-based IR intrusion detector** that triggered real-time alerts with **<250 ms** latency; added pass-key reset via a web UI to prevent false alarms.
- Implemented **FastAPI backend** with secure device endpoints and Firebase integration, enabling reliable alert logging and authentication between the ESP32 and the UI.
- Developed a **React.js dashboard** supporting **live sensor status**, pass-key input, and system controls; deployment scripts enabled **~15-minute** full redeploys during testing.

Extracurricular Activities

- Robotics- Supported development of the robot's **autonomous functions** by implementing basic motion logic, testing sensor behavior, and researching path-planning approaches.

TECHNICAL SKILLS

Programming Languages: Python, JavaScript, Java, C, TypeScript, HTML/CSS
Frameworks and Tools: React.js, Node.js, FastAPI, ROS2,Express.js,Scapy.py,Chart.js,Firebase
iptables/UFW,ESP32,Git,VScode,Ubuntu,Github