Alex Klee

757-254-5854 | alex.klee111@gmail.com | linkedin.com/in/alex-klee

EDUCATION

Virginia Tech, College of Engineering | College of Science — **Blacksburg, VA**
BS Computer Science | BS Applied Discrete Mathematics — Aug 2021 - May 2025
GPA: 3.9/4.0

Virginia Tech, College of Engineering — **Blacksburg, VA**
Accelerated Master of Engineering, Computer Science and Applications — Aug 2024 - May 2026

PROFESSIONAL EXPERIENCE

Peraton — **Blacksburg, VA**
Data Science Engineer Intern — Jun 2025 - Present

- Built and hardened a custom MCP server for secure AI agent execution across many different agents and domains
- Designed and implemented an agentic AI system to scan cloud-native codebases for compliance with security controls
- Integrated AI-driven telemetry analysis with monitoring platforms to automate anomaly detection across K8s clusters

Hume Center for National Security and Technology at Virginia Tech — **Blacksburg, VA**
HIRF Research Fellow — August 2024 - May 2025

- Research project with industry partner L3Harris focused on software reverse engineering and vulnerability detection
- Investigated potential vulnerabilities (primarily remote code execution and privilege escalation) of various messaging apps on iPhones through reverse engineering, patching, sideloading, and dynamic analysis
- Leveraged tools such as Ghidra, x64dbg, and many iOS-related tools to effectively analyze iOS binaries

Hume Center for National Security and Technology at Virginia Tech — **Arlington, VA**
Intern — May 2024 - July 2024

- Explored, tested, and evaluated various applications of quantum optimization and quantum random numbers across different fields including machine learning, cybersecurity, and cryptography
- Found advantages of quantum optimization technology in multiple machine learning algorithms using PyTorch
- Tested and analyzed effectiveness of quantum random numbers in different cryptosystems

Hume Center for National Security and Technology at Virginia Tech — **Blacksburg, VA**
Student Researcher (Software Team) — Jan 2024 - May 2024

- Researcher on project Defend the Republic with the goal of developing a lighter-than-air automated drone
- Automated and tested our team's drone using OpenCV in C++ and Python for computer vision and ROS2

Virginia Tech Department of Computer Science — **Blacksburg, VA**
Undergraduate Teaching Assistant — Aug 2023 - Dec 2023

- UTA for CS1114 Intro to Software Design, a class focused on the foundations of object oriented programming in Java
- Held labs and office hours for students in the class multiple times a week, teaching foundations of Java and OOP

PROJECTS

Assessing the Vulnerability of LoRA-Based Fine-Tuning to Data Poisoning Attacks — **Jan 2025 – May 2025**
Senior CS Capstone Project

- Research project focusing on security risks of LoRA-based fine-tuning of LLMs, specifically Meta LLaMA
- Evaluated the impact of data poisoning attacks on 4 different LoRA-based Parameter-Efficient Fine-Tuning methods
- Fine-tuned with the Beavertails dataset and analyzed results using various metrics such as ROUGE and BLUE scores
- Compared results from the different PEFT methods and assessed which ones may be more liable to poisoning attacks
- Investigated mitigation strategies to enhance the robustness of fine-tuned models against adversarial manipulation

SKILLS

Languages, Frameworks, etc: Python, Java, C, C++, Linux/Unix, Wireshark, nmap, IDA Pro, Ghidra, x64dbg, Burp Suite, OMNeT++, PyTorch, Bash, HTML, CSS, JavaScript, MongoDB, React, Express.js, Node.js, AWS, Docker