Joseph Dinsmoor

202-766-2941 | jdinsmoor@dinsmoor.pw | linkedin.com/in/joseph-dinsmoor | github.com/joedinsmoor

Education

Virgina Commonwealth University — Richmond, VA
Bachelor of Science in Computer Engineering - GPA: 3.67 — *Aug. 2019 – 2024*

Experience

Software Engineer — December 2023 – Present
Swirl — *Waltham, MA*

- Developed new client API that cut latency and response times by 50% using django and redis
- Implemented new connectors for private clientele and met customer needs
- Implemented ability to use multiple AI providers and parse data concurrently, resulting in higher accuracy and lower latency
- Built out application for Azure Containerization, enabling easy deployment for customers

Investigator Intern — January 2023 – December 2023
Virginia State Police — *Midlothian, VA*

- Conducted digital forensics for over 15 active cybercrime investigations
- Wrote custom image binary analysis tool for KaiOS devices using GoLang and Python, enabling investigators to parse KaiOS device images in seconds, rather than hours
- Built custom tools in C++ to reduce forensic processing time of device binaries by 75%

Undergraduate Researcher — June 2021 – December 2023
Virginia Commonwealth University — *Richmond, VA*

- Reverse engineered proprietary memory encryption algorithms and defeated built-in CPU watchdogs
- Wrote Python scripts to extract memory from PLCs, disable memory protections and analyze the results
- Performed risk analysis on potential vulnerabilities in ARM-based industrial control systems

Projects

KaiOS Image Parser and Analysis Tool | *Python, OpenCV, SQLite3, PostgreSQL* — January 2023 – Present

- Created an open-source program that parses KaiOS based images for forensic analysis
- Enables investigators to promptly parse KaiOS "burner" cellphones
- Uses regex and bitwise reconstruction to comb through binary image
- Used Celery and Redis for asynchronous tasks

Vehicle Log Events and Protobuf Parser(VLEAPP) | *Python, NodeJS, React* — March 2023 – Present

- Contributed to Open-Source Vehicle Log Events and Protobuf Parser
- Contributed new artifacting methods for performing digital forensics for different vehicle infotainment systems
- Added ability to parse QNX filesystems
- Brought down parse times by 90%

Automatic Rsync Utility | *Python, C++, Rust, DJango, PostgreSQL, Celery* — June 2023 – Present

- Created utility for automated Rsync backups to Azure Cloud instance
- Used Celery for multithreaded processing of files and folders
- Created api to enable compatibility with most operating systems

Technical Skills

Languages: Python, C/C++, GoLang, SQL (Postgres and SQLite3), Rust, Javascript, R
Frameworks: Django, Redis, Celery, React, Node.js, Terraform, Go, Docker, SQLAlchemy, Flask
Developer Tools: Git, Docker, TravisCI, Google Cloud Platform (GCP), VS Code, Azure, Amazon Web Services (AWS)
Libraries: pandas, NumPy, Matplotlib