Alex Lin

Backend infrastructure developer with a foundation in Mathematics, Computer Science and Statistics.

Personal Info

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Languages (proficient)

- C
- Go
- Bash
- Python
- Javascript

Languages (familiar)

- Java
- SQL
- C++
- Lua

Cloud Tools

- AWS EC2, EKS, ECR, S3, etc
- Azure VNET, Blob Storage
- Terraform (provider development)
- Helm
- Git (ops and versioninig)
- Github/Concourse Pipelining
- Envoy network proxying
- Prometheus metrics
- Grafana + Alertmanager
- Etcd keystore
- Temporal

Technical Skills

- Well versed in Unix style systems.
- Good knowledge of OO design and implementation of design patterns.
- Good foundation in data structures and coding practices.
- Familiar with test driven development and test automation.
- Experienced in deploying, managing and scaling infrastructure.
- Good understanding of network protocols such as TCP/IP, HTTP, gRPC, BGP, ARP, OSI layers etc.
- Experience with build automation and cross compilation.
- Experience with security tools and frameworks such as Metasploit, Nmap, Wireshark etc.
- Familiar with creating service meshes and enabling mTLS connections.
- Familiar with certificate authority management and issueing.

Work Experience

Software Engineer   Aug 2022 – Present   Alkira Inc

- Maintaining existing Alkira infrasture such as AWS EC2, EKS, ECR, S3 using terraform, helm, git, concourse etc.
- Developing and maintaining Alkira's CXP (Cloud Exchange Point) infrastructure to support AWS China region.
- Building and securing a new sevice mesh proxy across Alkira's routing nodes to provide mTLS.
- Improving and maintaining Alkira's internal routers TLS certificate issuing scripts.
- Setting up and testing new service metrics, dashboards and prometheus alerts with slack integration.
- Debugging workflows and activities with the temporal engine and etcd to deploy on demand infrastructure such as routers to ensure idempotency and correctness.
- Participating in weekly standup meetings and work closely with senior engineers on architecture and system design, planning.

OS Security Developer and Testing Intern   May – August 2021   BlackBerry, QNX

- Developed new suite of unit tests for QNX's Strace utility in C and Python to test Libc POSIX system calls: message passing, IO, process forking, multithreading etc.
- Implemented new feature into Strace to output multithreaded tracing to different files. Debugged Strace for memory bugs using GDB remote debugging.

Full Stack Developer and Cyber Analyst Intern   Jan – Dec 2020   Deloitte

- Designed and developed a full stack webapp in Python, VueJS and PostgreSQL to help the cyber incident response team keep track of ongoing client engagements.
- Partly supported incident response team with log parsing and filtering using Python and Bash.

OS Security Developer and Testing Intern   May – August 2019   BlackBerry, QNX

- Ported and upgraded old tests written in a company internal testing framework to Pytest for QNX's Mandatory Access Control feature which controls the permission levels of running system processes.
- Maintained nightly regression test runs of all security features using Bash, Python and ssh/scp on a Jenkins server. Wrote bash Cron jobs using Rsync utility to generate backups of Jenkins server.

Education

University of Toronto   2017 – 2022

- **HBSc** Major in **Mathematics**, Double Minor in **Computer Science** and **Statistics**.
- Studied: Software Design, Networking, OS, Cryptography, Information Security.
- Competed in Canada's National Cyber Security Challenge for UofT in 2022.

Volunteering Experience and Personal Projects

Deerhunt Infrastructure Tech Lead   2017 – 2022 voluenteering   UTM Robotics Club

- Led a team of 10+ computer science students in the design, implementation, and testing of infrastructure for scheduling and computation of AI vs AI competitions.
- Automated the computation and scheduling of 3000+ matches between 510 iterations of AI players for 20+ teams of 2-4 students through Azure VM, Azure Blob, MongoDB, Flask, Gunicorn, Docker, NginX and ReactJS and Pytest.

Chartiy Productivity App   2021 Hack the North Waterloo Hackathon

- Developed a Backend API in Go for a productivity app idea payments and charity donations to help users stay on task.
- Used HttpRouter module and implemented Firebase authentication, stripe api calls and SQL queries to CockroachDB. Supported by yaml config files.

Javascript Animations   Personal Hobby Project

- Side hobby where I create Javascript animations using the Processing framework.