

A learner with 3.5 years of experience, with an interest in network security, cloud architecture, and system design.

## EDUCATION

Singapore University of Technology and Design

Class of 2016

Bachelor of Engineering with Honours majoring in Information Systems Technology and Design.

Specialization: Security and Communications, Artificial Intelligence.

## SKILLS

I am experienced in: Python, C++, Docker, Git, Linux, Make, Nginx, Sys Admin, PostgreSQL, InfluxDB, Bash, X509 Certs. I am familiar with: Javascript, HTML, CSS, GDB, SQLite, Puppet, Haskell, Valgrind, Redis, Kubernetes.

## WORK EXPERIENCE

Software Engineer in MicroSec Pte. Ltd.

Dec'17 - Now

I engage in designing the technical system solution from requirements to application implementation, delivery, maintenance, and customer support for Certificate Management and Load Monitoring Products.

- Developing X509 Cert Mangament Suite with it's own Cert Auth that allows cert issuance and automated renewal of various supported protocols.
- Developing and maintaining a Load Monitoring product suite which uses Raspberry PI as remote agents, providing monitoring and detection capabilites.
- Implementing MicroPKI: a proprietary protocol providing end-to-end encryption for embedded devices in IoT, which supports TLS 1.3 using P256, Ed25519, AES.
- Implementing REST APIs, near real-time data using MQTT, WebSockets, and developing modified in-house implementations of ACMEv2, EST, SCEP.
- Collaborating with multiple teams of 7+ individuals in implementing different product pipeline using Scrum
- Relational and TimeSeries Database administration and role management with appropriate security levels.
- Performing DevOps with Gitlab and Docker and providing CI/CD for on-premise and cloud servers using docker-swarm, kubernetes.
- System Administration of on-premise servers running on Hyper-V and cloud servers on AWS EC2.
- Limited experience on frontend dev using Angular and embedded dev for arm-cortex-m0.
- Working with CTO, PM and CSM manager to identify product requirements and provide technical solutions.
- Supervision and management of interns to full time employees following companies operating procedure.

*Tech Stack:* Python, C++, Flask, SQLAlchemy, Hypothesis, Docker, Nginx, CI, Puppet, PostgreSQL, Angular, Valgrind, Wireshark, AWS EC2, Droplets, X509 Certificates, Certificate Authority, Kubernetes, Redis, Influx

Research Assistant in iTrust Research Center for CyberSecurity

Nov'16 - Oct'17

Common Industrial Protocol (CIP) is a realtime network protocol being used in Secure Water Treatment (SWaT) testbed at SUTD. I followed specifications to implement a concurrent server to be used in simulation and various research purposes.

- Analyzed and reconstructed high volume CIP packets of both TCP and UDP variants using wireshark.
- Designed application using TDD and SOLID principles of OOP.
- Analysed Networks for vulnerabilites in testbeds: SWat and EPIC.

*Publication:* A. Siddiqi, N. O. Tippenhauer, D. Mashima, and B. Chen, "On practical threat scenario testing in an electric power ics testbed," in Proceedings of the cyber-physical system security workshop (cpss), co-located with asiaccs, 2018.

*Tech Stack:* Python, Flask, Wireshark, LxC, EtherNet/IP.

## ACTIVITIES

**External Involvements** - NUS XCTF 2016, Finalists for APEX Business-IT Global Case Challenge 2016, SG50 Hackathon 2015 Smart Nation, Secretary for University Photography Club.

**Interests** - Photography, Running, Non-Profit Social Events, Exploring Culture, CaptureTheFlag, Network Security, Physical Systems Security, Linux, Arch and Emacs.

**Languages** - English (Full Professional Proficiency), Bengali (Native).

