

AHNAF SIDDIQI | email: ahnafsid[at]gmail.com  
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A programmer keen in network security, cloud and system design with 4 years of experience.

## Education

Singapore University of Technology and Design

Class of 2016

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

Specialization: Security and Communications, Artificial Intelligence.

## Skills

Experienced in: Python, C, Docker, Git, Linux, (C)Make, Nginx, Sys Admin, PostgreSQL, InfluxDB, Bash, X509 Certs, TCP/UDP, TLS, Gitlab, CI/CD, Flask, SQLAlchemy, HTTP(S), SNMP, MQTT, AWS EC2 Management, Windows ADCS.

Familiar with: Javascript, HTML, CSS, GDB, Puppet, Valgrind, Redis, Django, Grafana, CPP, DTLS, MbedTLS.

## Work Experience

MicroSec Pte. Ltd. > | Senior Backend Engineer

Dec'17 - Now

I design and implement technical system solution from stakeholder requirements to application implementation, lifecycle, and delivery pipeline while managing customer operations.

*Role - Software Engineer*

- Designing and Implementing RESTful microservices using python that supports in-house implementations of ACMEv2, EST, and SCEP following their respective RFCs: 8555, 7030, 8894.
- Developing MicroPKI a performance multithreaded socket server: a proprietary TLS 1.3 protocol providing e2e encryption for embedded devices in IoT that supports multiple curves (P256, Ed25519) and ciphers (AES-128/256).
- Developing and maintaining an Energy Monitoring product that uses Modbus to read localized data that is transferred near real-time via MQTT that is batched process and stored InfluxDB.
- Microservices deployment in an offline environment using a customized standalone deployment policy.
- Continuous deployment in EC2 using Docker Swarm having support for both TCP and UDP clients.
- Implementing Puppet configuration files that provides remote updates for a custom build Raspbian OS.
- Configuration and management of on-premise softwares, hosted both on offline servers and AWS instances.
- AWS user role management and VPC configuration for microservices deployment: standalone and Docker Swarm.
- System Administration of on-premise Gitlab deployment and Runners for microservices pipeline.
- Experience using PSPKI to bridge Linux with Windows ADCS and AD configuration.
- Implementing agents for SNMP using PySNMP, SMTP, and Pyradius for RSA SecurID Authentication.
- Collaborating with multiple teams of 7+ individuals to ensure product delivery following Scrum methodology.

*Role - Operations*

- Working with internal stakeholders to propose product roadmap requirements and provide technical solutions.
- Requirement analysis and translation into well-defined scope of work.
- Collaborating with Product Owner in evaluating technological solutions for product.
- Supervision and management of interns to full time employees following companies operating procedure.

iTrust Research Center for CyberSecurity > | Research Assistant

Nov'16 - Oct'17

Implemented a concurrent Common Industrial Protocol (CIP), a realtime network protocol at Secure Water Treatment (SWaT) testbed in SUTD, that was used in simulation and various research purposes.

- Analyzed and reconstructed high volume CIP packets for both TCP and UDP variants using Wireshark.
- Designed application using TDD and SOLID principles of OOP.

*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

**Competitions** - NUS XCTF 2016, APEX Business-IT Global Case Challenge 2016 Finalists, Multiple Hackathons

**Interests** - Photography, Running, CaptureTheFlag, Network Security, Physical Systems Security, Linux, Arch and Emacs.