

# BRIAN (YUAN-AN) LIU

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## EDUCATION

### ILLINOIS INSTITUTE OF TECHNOLOGY, Chicago, IL

Master of Science, Computer Science

Aug 2016 - May 2018

*Association: IIT-Security Lab*

### CHUNG YUAN CHRISTIAN UNIVERSITY, Taoyuan, Taiwan

Bachelor of Science, Information and Computer Engineering (Computer Science)

Sep 2011 - Jun 2015

*Association: CYCU-Software Engineering Lab*

## SKILLS

- **Languages:** C++, C, Python, Shell Script, TypeScript, Go
- **Networking/ Protocols:** NSH, SFC, VLAN, VxLAN, TCP/IP, REST, SOAP, P2P, ZMQ, SRv6, RPC
- **Technologies:** Distributed/Embedded Systems, Security, SDN, NFV, Database, Machine learning, Git, Perforce, Docker, OF, OVS, GNU toolchain, Mininet, Flask, Yarn, Boost, Protobuf, vim

## EXPERIENCE

AMAZON WEB SERVICES, INC. (AWS), East Palo Alto, CA

Nov 2019 - Present

### Software Development Engineer

- Building distributed and streaming service for AWS Aurora database

F5 NETWORKS, INC, San Jose, CA

Jul 2018 – Nov 2019

### Software Engineer

- Developed F5 BIG-IP's Policy Enforcement Manager, Service Function Chaining and modularized.
- Implementation and maintenance for F5's products with a focus on both control and data plane.
- Development solutions for application delivery networking in CI/CD pipelines.
- SDN Controller (ODL) / RFC(s) feasibility Study and implementation.

KYPHER, LLC, St. Louis, MO

May 2017 - Aug 2017

### Application Developer Intern

- Full Stack Developer for Kypher™ HIPAA Compliant Messaging iOS application and IIS server.

R.O.C. NAVY, FFG-934, Taiwan

Jul 2015 - Jun 2016

### Sonar Technician Seaman (Mandatory Military Service)

- Operated and maintained sonar and underwater fire control systems

MOREMOTE, INC., Taipei, Taiwan

Jul 2014 - Jun 2015

### Embedded Systems Software Engineer

- Developed applications for two IP-Camera projects (BBCam™ and Ability HomeCam™).
- Created a client/server relationship between systems based on Apache Tomcat using SOAP, P2P with C++
- Responsible for strategy assessment, feasibility study, software release maintenance, and code reviews.

## PUBLICATION

1. **A Distributed Virtual Time on Embedded System for Evaluating Cyber-Physical Systems** (ACM SIGSIM-PADS 2019) (*Best Paper Award*)
2. **A Distributed Embedded Linux System Smart Grid Testbed** (GCASR 2018)
  - Provide synchronization solution for real-time processes to synchronize with a discrete time step solution electric power simulator using SDN (OpenvSwitch/Ryu/OpenFlow)

## ACADEMIC PROJECTS

### System Benchmarking and TeraSort on Cloud

Aug 2017 - Dec 2017

- Evaluated CPU, Memory, GPU, Disk and Network Performance on Private Cloud with OpenStack.
- Implemented with Python, C++, CUDA and Shell Script.
- Cross validated with LINPACK Benchmarks, STREAM, IOZone and IPerf.
- Implemented parallel external sort using Python, Hadoop and Spark on multi-node of AWS EC2 i3

### Implementation and improvisation of Netplumber

Jan 2017 - May 2017

- Implementation of the NetPlumber - Header Space Analysis
- Improvisation by using Girvan-Newman algorithm for Machine learning.
- Building an additional way to determine rules by providing statistical data