

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
- **Technologies:** Distributed/Embedded Systems, Security, SDN, NFV, Machine learning, Git, Perforce, Docker, OF, OVS, GNU toolchain, Mininet, OpenStack, ESXi, Flask, Yarn, Database, Boost, Protobuf

EXPERIENCE

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

Nov 2019 - Present

Software Development Engineer

- Building distributed storage for AWS Aurora relational 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