Yuan He

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EDUCATION

Cornell University, Ithaca, NY **Expected Jan. 2019**
Master of Engineering in Electrical and Computer Engineering, **GPA: 3.815/4.00**

Tianjin University, Tianjin, China **Jul. 2017**
Bachelor of Science in Measuring and Control Technology and Instruments (EE), **GPA: 3.64/4.00**, **Rank 27/138**

WORK EXPERIENCE

Newsky Security Solution Inc., SDE Intern @ Redmond, WA **May 2018-Present**

- Deployed a highly scalable monitor system using Nagios in Ubuntu from scratch for an IoT security application, successfully captured two AWS EC2 servers down and migrated the services before clients demo
- Co-developed an IoT honeynet system (12 Cowrie honeypots) deployed around the globe, consolidated the attack logs to a centralized database with Elk Stack
- Responsible for writing honeynet database's APIs in Python, and delivered data in a timely manner
- Published two Medium blogs for company's new branch (blockchain security), got 30 applauses in last ten days

National Metrization Equipment Center for Road and Bridge, SDE Intern @ Beijing, China **Dec. 2016-May 2017**

- Built a computer-vision based dynamic measuring system for asphalt pavement's permeability coefficient, constructed both the hardware and software (Visual studio + OpenCV)
- Implemented dynamic image processing (optimized the algorithm to process less than half of the IFS), servo tracking, data visualizing, and equipment calibrating, and integrated these functionalities in one UI application
- System's relative uncertainty was 6.28%, one-third of the technical specification requirements

RELEVANT PROJECTS

Degree Project: Cloud Application Benchmarking System Leveraging ML, Cornell University **May 2018**

- Set up tracing on a distributed application (imitated Netflix's commenting system) that use microservices
- Collected end-to-end traces by inserting timestamps around each microservice(deployed with Apache Thrift) with Thrift logger and TCPdump, aggregated them to generate different latency properties to enrich training set
- Reallocated CPU resources to generate appropriate core-allocation-ratio for the entire application, based off of CPU utilization, tail latency and network latency statistics
- Added CPU interference to each core for pinpointing the most CPU-bound services
- Utilized deep NN with 3-d input data in form of [service, time, measurement], with an average predicting time of 100ms, small enough to automatically predict Quality of Service violations before they could occur

Embedded OS (Linux) project: Smart Web-Door System, Cornell University **Dec. 2017**

- Built a door-guarding system on Raspberry Pi, permitting access with face, voice and fingerprint recognition, with a touch screen GUI and a secured-login web interface for remote door control
- Set up server (Python Flask) on R-Pi to support front-end web and restore visitor info (MySQL)
- Designed the front-end web interface that could video-stream monitor the front door, pre-verify visitor identities, get notified by visitor requests, retrieve visitor voice messages, and remotely control door lock
- Face recognition ran at 15 FPS utilizing multi-core parallelizing, 3X faster than usual single-core implementation

A Multi-threaded Key-Value Store Server, Cornell University **Oct. 2017**

- Created a key-value store database server (Python) that updated by *put*, *get*, *delete*, and *crash* commands, with other functions of *failure*/*success* return-messages, database auto-flashback, disk auto-searching, timeouts and etc.
- Maintained a 32-thread pool to serve multiple clients, and a queue for pipelining client's queries sequentially
- Implemented thread safety solely on Python's synchronization primitives, instead of other thread-safe modules

Online To-do List Application, Udemy **June 2018**

- Built a calendar based to-do list application from scratch, self-designed front-end with CSS and jQuery, constructed back-end with MySQL, and cooperated their logic with PHP and AJAX

SKILLS

Language: Java, Python, SQL, C++/C, PHP, HTML, JavaScript, Solidity
Framework & Tool: Git, Nagios, Jenkins, jQuery, AJAX, AWS EC2, Nginx, MongoDB, MemcacheD, TCPdump, Cowrie (Honeypot), Eclipse, MATLAB, MySQL, SPSS, AutoCAD, Labview, LaTeX, Penetration Test