

# Jiecheng (Dominic) Shi

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## EDUCATION

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### Northwestern University, McCormick School of Engineering

Evanston, U.S.

- M.S. in Electrical Engineering (GPA: 3.75/4.0)

Sept. 2019 – Expected Dec. 2020

### Shanghai Jiao Tong University, UM-SJTU Joint Institute

Shanghai, China

- B.Eng. in Electrical and Computer Engineering

Sept. 2015 – Aug. 2019

- Minor in Data Science

Sept. 2017 – Aug. 2019

- **Relevant Courses:** Data Structures and Algorithms, Discrete Mathematics, Linear Algebra, Intro to Computer Organization, Introduction to Operating Systems, Computer Networks, Probabilistic Methods in Eng., Data Mining and Machine Learning, Data Analytics, Convolutional Neural Network for Visual Recognition, etc.

## WORK EXPERIENCE

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### Amazon Web Services, Inc.

Seattle, USA

Software Development Engineer Intern

Jun. 2020 – Present

- Using Domain-driven Design to develop an Application Infrastructure Model. The model allows all team members to synthesize and deploy all infrastructures for EC2 networking team's services simply and safely.

### Baidu China Co., Ltd.

Shanghai, China

Software Engineering Intern; DuerOS Division

Jul. 2018 – Mar. 2019

- Engaged in the development of Automatic Wifi Configurator for the decentralized smart home system, which allows off-line smart home devices to automatically search on-line devices and then establish encrypted connection with the domestic Wifi through 802.11b and CoAP protocols
- Developed all embedded device code and finished debug and unit testing
- Conducted the collaborative commissioning with the cloud server and mobile App including debugging cloud server-side backend code and optimizing the logic of code for mobile App
- Optimized the response-time (from 1000ms to 300ms) & reliability of the configurator and finally submitted a high-performance demo merged in main track of next product release

### Transwarp Technology (Shanghai) Co., Ltd.

Shanghai, China

Software Engineering Intern; Middleware Division

Feb. 2018 – Jun. 2018

- Developed the "Workflow" system, a schedule and dispatch platform which can cope with various data tasks, such as SQL/spark task, shell task, HTTP task, etc. with high concurrency and dependencies, and finally executes them efficiently and robustly with customized policies
- Engaged in the development of the "Pilot" system, a multi-purpose Web based on Flask that can collect and analyze 10TB-level dataflow from diversified big data source including HDFS, Hbase and mainstream databases through commercial modified Spark SQL, then visualize processed data through integrated BI component

## SELECTED PROJECTS

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### Intelligent Server Performance Tuning Framework

Aug. 2018 – Dec. 2018

Capstone Project Sponsored by Intel Asia-Pacific Research & Development Ltd.

- Implemented a C++ hardware simulation program to reappear the core frequency drop issue of AVX512 task mixing with non-AVX task on real CPU. The program has similar behaviors like real CPU and Linux shell
- Implemented reinforcement learning algorithm for the CPU workload tuning module
- Conducted the collaborative commissioning of RL algorithm, hardware simulation program and python GUI. Tested and improved the framework performance through training on the real server environment in Intel Lab (supporting CPU cores from 8 to 56)

### Home-brewed High-performance C Compiler

Feb. 2020 – Mar. 2018

- Constructed a high-performance C language compiler with half of Clang's compiling speed.

### Home-brewed High-performance Multi-thread SQL Database

Oct. 2018 – Nov. 2018

- Implemented a high concurrency multi-thread basic SQL database with object-oriented design in C++, which used thread pool, paging, cache, and race condition controlling locks to ensure the database can run correctly and efficiently with at least half a million queries.