GUANHUA CHEN

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EDUCATION

DUKE University *August 2019 - May 2021*
M.S. in Electrical & Computer Engineering

Huazhong University of Science and Technology *September 2015 - June 2019*
B.S. in Electrical & Computer Engineering

INTERN

Duke Polarization Lab May 2020 - Jan 2021
Express, React, Redis, D3

- Developed a web app that reflect ideology score based on the user twitter handle.
- Built an Express server which pull data from Twitter api. Dealing with the paging issue and rate limit problem.
- Used Redis to improve server performance from 1 to 0.5 ms/request.
- Helped build frontend with React. Used D3 to visualize the user connection.

PROJECTS

Mini Amazon March 2020 - April 2020
Python, Django, PostgreSQL, Bootstrap, JQuery, Nginx

- Developed a RESTful online shopping web app and shipped in Docker.
- Define protocol using Google buffer protocol, making communication more reliable and reduce overhead.
- Used queue and sequence number to track messages. Designed threading strategy for communication.
- Implemented user friendly interface using Bootstrap. Added CSRF token for protection.
- Designed schema for user, products and stored data in PostgreSQL. Used Nginx as reverse proxy.

Conquer February 2020 - March 2020
Java, Android, Morphia, MongoDB, JUnit, Gradle, Docker, JSSE

- Developed an Android Civilization-like multi-player strategy game. Used JSSE for encryption.
- Built with Gradle, continuous deployed with Gitlab pipeline, tested with JUnit.
- Built a robust server with disaster recovery strategy. Reconstruct thread and retrieve all game state.
- Designed the threading & syncing strategy for player gaming and direct messages.
- Designed game info schema and used Morphia to persist all gaming data in MongoDB.
- Achieve 100% test coverage under JUnit framework. Making sure all exceptions are handled properly.

Shell November 2019 - December 2019
Linux, C++, GDB, Valgrind

- Implemented a Linux shell in RAII style which could interpret basic command.
- Parsed the input string using regular expression. Tested with GDB & Valgrind, no memory leak.
- Provided access to environment variable and redirection for io stream.

STRENGTHS

Frameworks	**Spring, Django, React, Express, Bootstrap, Node**
Languages	**Java, Javascript, C++, Python, Go, SQL, noSQL**
Tools	**Postman, GDB, Unix CLI tools**