

# QIANGQIANG LIU

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## EDUCATION

### Duke University

M.S. ECE; Software Engineering track; GPA: 3.95/4.0

Durham, NC

08/2021 – 05/2023

### University of Liverpool

Bachelor of Computer Science, GPA: 3.96/4.0

Liverpool, UK

09/2019 – 06/2021

## SKILLS

### Programming

C/C++, Python, Java, JavaScript, SQL, HTML, CSS

### Framework

Flask, Django, Spring, Vue.js, Apache Tomcat, TensorFlow

### Tools

Linux, Git, SVN, Emacs, Vim, GDB, MySQL, Postgres, Docker, AWS

## PROFESSIONAL EXPERIENCE

### Juniper Networks - Software Engineer Intern, Security Team, Sunnyvale CA

05/2022 – 08/2022

- Implemented a **network interface testing tool** with JIT (Juniper Interface Tester) to verify the integrity of Packet Forwarding Engines on Juniper SRX firewalls.
- Examined this tool on **8** types of SRX testbeds and **automated** this testing process with Python and Expect scripts.

## PROJECTS

### Mini UPS - Django, Postgres, Google Protocol Buffer

04/2022 – 05/2022

- Built a shipping website with **Django** that can deliver packages ordered from **Mini Amazon** website.
- Designed protocols using **Google Protocol Buffer** to communicate with Mini Amazon website through sockets.
- Implemented back-end communication with **Java** and emulated at-least-once and at-most-once messaging semantics with **SEQ** and **ACK** number to **avoid message failures**.

### Risk Game - JavaFx, Mockito, CI/CD

02/2022 – 05/2022

- Built a Risk like board game that supports **multi clients** and **multi game rooms** running concurrently.
- Emulated the **Software Engineering Process** with TA as a customer to propose and change game requirements.
- Created client-side UI with **JavaFX** and **MVC** design pattern to resolve coupling of game logic and view.
- Wrote testcases with **Mockito** to simplify the development process by mocking external/unfinished dependencies.
- Setup GitLab **CI/CD** to **automate** the build, test and deploy process after every push to GitLab.

### Http Proxy - C++

01/2022 – 02/2022

- Implemented a Daemon Proxy Server in C++ that can forward **HTTP/HTTPS** requests on behalf of the client.
- Utilized pre-created threads to **avoid blocking** caused by multiple concurrent requests.
- Designed cached response according to **RFC** standard to avoid duplicate requests and reduce server load.

### Monte Carlo Visualization - JavaScript, JSXGraph

04/2021 – 06/2021

- Implemented Monte Carlo Algorithm to measure the volume and area of irregular 2D and 3D shapes by random sampling points in the shape.
- Created a **front-end** website with **HTML**, **CSS**, **JavaScript** to visualize the process, implemented interactive geometries with **JSXGraph**, allowing the user to define their own shape.
- Hosted this static service on **GitHub Pages** and blogged with **Jekyll**.

## AWARDS

Merit Scholarship of University of Liverpool

06/2019

University Academic Excellence Award of XJTLU

06/2018

## ACTIVITIES

2nd Place in Juniper Cyber Security Hackathon

07/2022