

## Chengyi Liu

Boston MA|02120|2172056171|[liu.chengyi@northeastern.edu](mailto:liu.chengyi@northeastern.edu)<https://github.com/chengyi3>

<https://www.linkedin.com/in/chengyi-liu-7095951b4/>

### EDUCATION

**Northeastern University**, Boston, MA

Sep 2020 - Present

**Khoury College of Computer Sciences**

Expected Graduation: Dec 2022

*Candidate for a Master of Science in Computer Science*

Related Courses: Object Oriented Design (Java), Algorithms, Web Development, Software Engineering, Operating System (c), Serverless Computing (AWS), Mobile Development, Database System.

**University of Illinois at Urbana-Champaign**, Illinois, IL

Sep 2017 - May 2020

*Bachelor of Science in Mathematics*

Related Courses: Mathematical Logic, Abstract Linear Algebra, Probabilities, Calculus III, Data Structures (C++), Database Management System, User Interface Design, Intro to Artificial Intelligence. (Python).

### TECHNICAL SKILLS

**Languages:** Java, C, C++, Python, JavaScript, C#, Go.

**Databases:** MySQL, MongoDB, Redshift.

**Web Technologies:** HTML, CSS, React, JPA, Bootstrap, Redux, SpringBoot, .Net, Node, AWS, Heroku, Docker, Express, Mongoose, Numpy, PyTorch, Jupyter Notebook, Panda.

### PROFESSIONAL EXPERIENCE

**C\_SPACE**, Boston, MA (**Git, React, JavaScript, C#, Azure SQL, .NET, Scrum**)

June 2022 - Aug 2022

*Software Engineer Intern*

- Refactored user profile page in react and added survey component to user profile page.
- Fixed bugs and added more validations to ensure backend API function as desired.
- Automated environment setup process and collaborated with two teammates on website design.

**Northeastern University**, Boston, MA

Jan 2022 - May 2022

*Teaching Assistant*

- Held office hours to tutor more than 100 students in Algorithm class and held exam review sessions.
- Provided solutions and created grading rubrics for homework and exams.

### PROJECTS

**Concurrent key Value Store (C, Python, Pthread, GDB, Unix)**

- Designed and implemented APIs to support multi-threaded concurrent read/write/delete/print operations.
- Implemented Key-Value server to parse the operation sent from client and dispatch it to Key-Value store and return results to client.
- Created multiple threads in client and sent concurrent operations to Key-Value server in order to test and find concurrent bugs.
- Improved Key-Value store performance by 10% using hash table.

**Unix-like File System (FUSE, C, GDB, Shell, Python, Unix)**

- Constructed data structure for unix inode and directory entries and calculated file size, directory size and max number of disk blocks.
- Designed efficient algorithms that enable search/read/write/make/remove a file as well as get the meta data of a file.
- Implemented file system on Fuse that support various unix command: cd, ls, mkdir, touch, write, rm, etc.
- Utilized debug tools (GDB) to test and fix bugs.

**E Commerce Website (Java, SpringBoot, MySQL, JavaScript, React, Heroku, RESTful API)**

- Built a full stack shopping website using react for frontend and springboot for backend which allow users browse items, add items to cart and check out items.
- Implemented homepage for admin with additional create/delete user function and homepage for user with additional comment function.
- Designed and implemented MySQL database to store user/admin information and shopping cart information.
- Deployed application on Heroku: <https://webdev-cyu.herokuapp.com>.

**HMM POS Tagging (Numpy, PyTorch, Python)**

- Implemented part of speech (POS) tagging using Baseline algorithm and Viterbi algorithm.
- Utilized the training data to compute and compare two algorithms on overall accuracy and unseen words accuracy.
- Chose Viterbi algorithm to infer tags for the test input with an overall accuracy of 95% compared to correct tags.