

Ruo Liu

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EDUCATION

University of Illinois at Urbana-Champaign

Bachelor of Science in Computer Science; GPA: 3.93

Expected May 2024

- Courses: Data structure, Database Systems, Machine Learning, System Programming, Numerical Methods, Discrete Structure, Computer Architecture, Program Languages & Compilers

PROJECTS

UFO Sightings Web App | *React, Spring Boot, MySQL*

July 2022 – Aug 2022

- Parse over 20,000 UFO sightings, locations, and users and insert into MySQL database on GCP
- Developed dynamic webpage to view and modify data using React framework
- User can add, update, rate UFO Sightings, processed by spring boot backend
- Wrote flexible queries which accept variable amount of search parameter
- Display dynamic list of high rated sightings with SQL procedure

Shortest Flight Route Animation | *C++*

Oct 2021 – Dec 2021

- Use C++ to Process over 14k airline flight data store in CVS file
- Compute the shortest route with Dijkstra's algorithm
- Compute the centrality of each airport and output the top 50 airports
- Create a gif file to display BFS and the shortest the route for user to visualize route result

Non-blocking Network | *C*

Nov 2022 – Dec 2022

- Use level-triggered epoll to create non-blocking network with basic functionalities
- Allow user to upload, download and delete files
- Implement text-based protocol with careful error handling

Classify Handwritten Digits with Neural Networks | *Python*

Nov 2022 – Dec 2022

- Set up Neural Network and use Cuda to speed up training
- Divide dataset into mini-batches to leverage both robustness of stochastic gradient descent and efficiency
- Compare stochastic and ADAM descent method when training the dataset and get best loss value

Multi-Node Event Ordering | *Go*

Jan 2023 – Feb 2023

- Use golang to write distributed nodes connected with each other to maintain accounts and transactions
- Implement ISIS algorithm to maintain total order in asynchronous system
- Using heartbeat to detect failure and crashed process

Courseable Application | *Java, Android Studio*

Nov 2020 – Dec 2020

- Implemented an Android app that listed every Computer Science course
- Allow user to create ratings of the course

EXPERIENCE

Chem Lab Assistant

May 2020 – July 2020

Nanjing Tech University

- Assisting in conducting genetic experiments altering the behavior of brown alga to produce fertilizer

TECHNICAL SKILLS

Languages: C/C++, Python, Java, Go, React, SQL, MongoDB, Rust, HTML/CSS, Haskell, R

Technologies: Git, Docker, GCP