Yiying Jiang

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Education

University of Michigan-Ann Arbor **August 2021 – April 2023**
Bachelor of Engineering in Computer Science GPA:3.82/4.0 *Ann Arbor, United States*

Shanghai Jiao Tong University **September 2019 – August 2023**
Bachelor of Engineering in Electrical and Computer Engineering *Shanghai, China*

Extracurricular Activities: Chief director of Student Winter Ball, Student Buddy, Class Monitor

Relevant Courses: Data Structure and Algorithms, Object-oriented Programming, Web Systems, Database Management Systems, Operating Systems, Distributed Systems, Computer Networks, Computer Security, User Interface Development, Computer Organization, Artificial Intelligence, Game Development

Awards:

- Fall 2021 Dean's Honor List, Umich (Feb. 2022)
- Fall 2022 Dean's Honor List, Umich (Jan. 2023)
- Winter 2022 Dean's Honor List, Umich (Jun. 2022)
- Undergraduate Excellent Scholarship, SJTU (Nov. 2020)

Experience

Shanghai Gengyuan Education Technology Co. **March 2021 – May 2021**
Software Engineer Intern *Shanghai, China*

- Designed a Mars-Rover Prototype with Solidworks, simulated the electronic circuit with Fritzing
- Wrote C-style code in Arduino IDE to control the rover and implemented a feature for adjusting its speed
- Completed the code for automatic white balance calibration to improve the accuracy of color detection
- Collaborated with colleagues to transform it into a teaching tool that was applied to a series of courses with a total of 100+ students

Technical Project

Instagram Simulator **February 2022**
Individual Project *Web Systems, Course Project*

- Wrote 11 web page templates in jinja2 syntax with HTML/CSS and coded Python program that takes web page templates, JSON data, and static files(like images and CSS) as input and generates a static website as output
- Created a database using SQLite3 with 5 tables containing 3KB data, under the framework of Flask, defined safe SQL queries that enable user interactions, and designed endpoints with route decorator
- Utilized session to store stateful information and applied cookies for authentication to realize login and logout
- Coded program in React/JS that runs in web browsers and makes AJAX calls to the REST API to enable client-side web interactions, as well as in-place refreshing

Network File Server **April 2022**
Team Project *Operating Systems, Course Project*

- Set up a TCP socket in C++ for a server that listens to user's request on assigned port, creates a new thread to handle each request and sends the result back to the client socket
- Implemented a tree structure, with inode blocks (512 bytes each) containing information of owner, type (repository or file), and at most 124 pointers to other inode blocks or data blocks, to simulate a nested multi-layer file system
- Cooperated with team members to deal with consistency problems by applying mutex lock to ensure mutual exclusion and building a shadow file system to make system update operation atomic

Paxos-based Key/Value Service **October 2022**
Individual Project *Distributed Systems, Course Project*

- Used Paxos to manage the replication of the Key/Value stored so that all replicas will process all clients' requests in the same order based on the Paxos agreement
- Wrote program for Paxos which included 3 phases: Prepare, Accept, and Learn that can maintain linearizability even with the out-of-order messages caused by unreliable internet and unreliable servers
- Built a PaxosRSM layer above the Paxos layer that accepted the instances sent by the Key Value Server (KVPaxos) and add operations in the log by proposing the instance to the Paxos servers
- Coded a Key Value Server (KVPaxos) that deals with the Get and PutAppend sent by clients and applied the operation locally if returned from the PaxosRSM, preserving at-most-once semantics even with the duplicated messages caused by unreliable internet

Technical Skills

Programming Languages: C, C++, Python, HTML, CSS, JavaScript, Java, SQL, Golang, C♯, Assembly Language
Tools: Git, Github, Linux, Docker, VScode, Visual Studio, Figma, MATLAB, LaTeX, Markdown, Unity, AWS
Libraries/Frameworks: React.js, Vue.js, jQuery, Flask, Hadoop MapReduce, Network Socket