

# YUSHU CHEN

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## EDUCATION

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**Seattle University, WA**

*January 2023 - December 2024*

*Master of Computer Science*

**University of Oregon, Oregon**

*September 2017 - June 2022*

*Bachelor of Computer & Information Science*

## PROJECTS

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### **Multi-threaded local file search engine (June 2021 - August 2021)**

- Built an inverted index based search engine for searching related local files given query string
- Supported exact search as well as fuzzy search based on Damerau-Levenshtein distance
- Implemented thread-safe inverted index and extended the search engine with work queue to support multi-threaded mode
- Improved the average response time by 72% with multi-threaded implementation

### **Redis based reliable message queue implementation (June 2021 - August 2021)**

- Implemented a message queue with Java Spring, where Redis serves as the backend store
- Implemented reliable delivery to ensure the message is delivered at least once
- Integrated configurable serializer for payload serialization and optional retry strategy for publishing/consuming message
- Improved system throughput by supporting parallel message consumption of multiple consumers

### **Built simple MySQL engine (January 2023 - March 2023)**

- Assembled tools and built the core of SQL shell
- Built a rudimentary storage engine
- Built a C++ file to get the SQL index commands working
- Implemented a B+ Tree Index
- The system handled basic tasks like table creation and data search, akin to MySQL

### **Bilimetrix web project (July 2023 - September 2023)**

- Built unit tests for different pages and fixed bug
- Increase code coverage for unit tests to HTML file
- Redesigned some web pages such as the sign-in page or update page

## CORE COURSES

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### **Master of Computer science**

- Physical database design and operation (DBMS algorithms, C++ database management, distributed databases)
- Distributed Systems. (client, bully algorithm, pub/sub)
- Fund of Software Engineering (foundational knowledge in software development processes and principles)
- Cloud Computing (Virtual Network, Load Balancing, API deploy )
- Software Testing and Debugging (Gaining knowledge of testing processes, UI Test, and unit test.)
- Parallel Computing( map and reduce techniques, mutex and atomic operations, MPI usage)

### **Bachelor of Computer & information science**

- Intermediate Data Structures, Computer Organization, Intermediate Algorithms, C/C++ and Unix
- Operating Systems, Software Methodology, Principles of Programming Languages, Intro database
- Introduction to science visualization, Secure Software Development
- Machine Learning(CNN, Computer Vision)

## TECHNICAL SKILLS

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**Programming:** Java, Python, HTML, C++, C#

**Software & Tools:** MySQL, Linux, Git, Docker, Selenium, AWS, Visual Studio Code