

Haohu Shen

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STRENGTHS

- **Open-minded:** Passionate about innovative solutions and keen to explore new technologies. Always eager to think outside the box and address challenges by adapting to new tech areas quickly.
- **Teamwork:** Committed to collaboration, consistently engaging in active communication and discussions in a small, dynamic team. Values feedback from team members and promptly identifies and addresses issues for resolution.
- **Detail-oriented:** Exhibits patience during code reviews and debugging. Proficient in identifying performance bottlenecks and refining code. Enjoys delving into details by examining the source code.

SKILLSET

- **Languages and Operating System:** Java, Python, Cpp, Python, Bash, RHEL
- **Databases:** MySQL/Python Pandas, Redis, MongoDB, MinIO
- **Containers, Microservices and Cloud:** Docker, Kubernetes, Springcloud, AWS
- **DevOps and Agile Development:** Github Actions, Gitlab Runners, Jira
- **Algorithms:** Love solving algorithmic problems in [Kattis](#) and [Hackerrank](#)

SIDE PROJECTS

- **Dynamic Top-K Ranking Service:** A web service designed to dynamically calculate and return the top-k most mentioned strings. It supports high concurrent access, utilizes Spring Boot's default caching strategy, and online openAPI docs, and includes Mock MVC unit tests for endpoints.
- **BKTree:** An implementation of a Burkhard-Keller Tree (BK-Tree) in Cpp 20 to find similar words based on a given distance metric. This is particularly useful for applications like spell-checking and autocorrection.
- **WordAdvisorLib:** An implementation of the algorithm that finds the closest word match for a given input word using Levenshtein distance. It supports multi-threaded word matching to optimize performance. This project also demonstrates how to use pybind11 to wrap Cpp APIs for ease of use in Python projects.
- **Caches:** Designed a caching system using Cpp with template specialization, featuring FILO, FIFO, LRU, and LFU eviction policies. Incorporated anti-hash collision techniques for enhanced performance.
- **K-Way Merger:** Implemented a high-performance sorting and merging algorithm in Golang to process billions of integers from files, leveraging a binary heap structure and Go-routines.
- **Food Ordering App:** Oversaw the entire development lifecycle of the project's back-end, including database design and maintenance, *RESTful API* development, API docs, and the implementation and execution of unit tests.
- **Dots Lock Cracker:** Developed a puzzle solver for the game *Atomic Heart*. The solution process was abstracted as finding the shortest possible path in a directed graph. Leveraged Dijkstra's shortest path algorithm, top-down dynamic programming, backtracking, and graph theory principles.

EDUCATION

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| • University of Victoria | Victoria, British Columbia, Canada |
| • <i>MEng in Telecommunications and Information Security</i> | <i>September 2023 - August 2024</i> |
| • University of Calgary | Calgary, Alberta, Canada |
| • <i>Bachelor of Computer Science with distinction</i> | <i>September 2018 - February 2022</i> |

WORKING EXPERIENCE

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| • Undergraduate Teaching Assistant | University of Victoria |
| • <i>Working as a TA for CSC360: Introduction to Operating Systems</i> | <i>January 2024 - May 2024</i> |

AWARDS AND HONORS

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| • International Collegiate Programming Contest | |
| • <i>Achieved silver medal in North America Rocky Mountain Regional Programming Contest</i> | <i>March 2021</i> |
| • Dean's List Placement of UCalgary | |
| • <i>In the dean's list</i> | <i>2019 - 2020</i> |

EXTRACURRICULAR ACTIVITIES

- **Calgary Hacks 2020:** Drafted the project idea, and database, participated in code review and demo.
- **Open Source Projects:** Improve the documentation of projects OI-WIKI and Huawei Opengauss Database.