Dac Tri Ho 🌲

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Skills

- **Programming Languages:** C++, C#, C, Python, and Assembly (RISC-V).
- **Operating Systems:** Windows and Linux.
- **Softwares:** Visual Code Studio, Unity, IDLE, MATLAB, and Microsoft Office.
- **General:** Native Vietnamese speaker, organized, fast learner, and attention to detail.

Academic Projects

RISC-V Emulator *in C* *September 2024 - December 2024*
Introduction to Computer Systems - Simon Fraser University - Burnaby, BC

- Unpacked the 32-bit machine code instruction given using masking and shifting to parse it into the correct type within the instruction structure.
- Implemented basic RISC-V instructions using their execution logic to successfully simulate RISC-V instructions within C.
- Created a custom instruction based on the framework and logic of existing instruction types to further validate the implemented system's flexibility and extensibility.

***Cache Emulator* in C** *September 2024 - December 2024*
Introduction to Computer Systems - Simon Fraser University - Burnaby, BC

- Implemented helper functions using an LRU policy to handle cache operations, including probing, evicting, flushing, and inserting.
- Developed a cache simulator in C using valgrind memory traces to simulate cache hit/miss behavior and reporting total hits, misses, and evictions.
- Enhanced the cache system based on a two-level exclusive cache hierarchy to create hierarchical interactions and analyze the impact of cache memory on performance.

HeapT Template Class Implementation *September 2024 - December 2024*
Data Structures and Programming - Simon Fraser University - Burnaby, BC

- Developed a generic HeapT template class to implement a min-heap using dynamically allocated arrays, ensuring scalability for any comparable data type.
- Wrote and tested helper methods using bubble-up and bubble-down mechanics to preserve heap properties and ensure efficient heap operations.
- Created a largestm template function using the existing the HeapT class to efficiently extract the top m largest elements from an unordered vector in O(n*log(m)) time.

Volunteer Work

Peer Tutor for Introduction to Computer Systems *February 2025 - April 2025*
Simon Fraser University - Burnaby, BC

- Tutored students in Introduction to Computer Systems (CMPT 295) by providing guidance on key concepts such as computer architecture, RISC-V, caches, pipelines, memory systems, and assembly language programming.
- Explained complex topics such as pipelining and cache performance using approaches that have helped me through the course to enhance understanding and application for new students.
- Assisted newer students with debugging and optimizing C and assembly code while emphasizing best practices in low-level programming that I have learnt myself through my own experiences of the course.

Library Volunteer *November 2021 - June 2023*
High School's Library - Gonzaga High School - St. John's, NL

- Mainly worked in the book room with other volunteers to help organize and keep stock of books that were not used in the main library.
- Helped set up and clean up the library before and after presentations and events whenever they are scheduled.
- Distributed and collected textbooks from each classroom at the start and end of each semester to ensure accurate inventory management and proper allocation of books

Education

Bachelor of Science in Computer Science *September 2023 - Present*
Simon Fraser University - Burnaby, BC | CGPA: 3.69 out of 4.33

Highschool Diploma *September 2021 - June 2023*
Gonzaga High School - St. John's, NL

Interests

- Playing chess.
- Doing escape rooms with my friends.
- Exploring game design and mechanics through documentaries.
- Learning more about game development platforms such as Unity.