Fu Yamaoka

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SKILLS

C/C++   Verilog   Assembly   MATLAB   Python   Pytorch   ModelSim   Multisim   Logism   GIT   FPGA   Iterative Engineering Process   Arduino   Circuit Analysis   CAD   Project Management   Lab Safety   SolidWorks

WORK EXPERIENCE

Tutorax, Private Tutor   **June. 2024 - Present**
Laval, QC
- Tutored students in AP-level physics, math, and chemistry by breaking down notes and homework problems step by step and aiding in summer school exam prep by analyzing students' weaknesses and focusing on improving those areas.
- Customized teaching style to each student to optimize their information intake increasing their performance in classes by broadening their understanding of the course material.

Medical Podcast App Design, Project Manager   **January. 2023 – April. 2023**
University of Toronto, Toronto, ON
- Collaborated with a team of 5 other engineers to design a solution to provide our client with a means of efficiently delivering information about medical case studies.
- Applied the iterative engineering design process, evaluating the client's needs and requirements, and creating effective solutions and implementations.
- Utilized app design website to create virtual models, simulating various app design layouts for optimal user experience.
- Researched optimal strategies to relay information while maintaining user retention effectively.
- Completed documents such as the project requirements and conceptual design specifications ensuring the final product exceeded the client's requirements and expectations.

APPLIED EXPERIENCE

Navigational Map   **(C++)**
University of Toronto, Toronto ON
- Developed a fully functional map application for various cities, enabling zooming, panning, navigation, and transit route display.
- Accessed and managed street databases and utilized OSM APIs to parse and organize relevant data, optimizing performance.
- Implemented open-source solutions like the EZGL library and Glade software for GUI development, enhancing user interaction and visual appeal.
- Utilized Profiling tools such as Callgraphs and Flamegraphs, along with the chrono library to optimize code for speed and performance.
- Collaborated with a team of 2 other developers, utilizing git for code sharing and version control.
- Applied the Dijkstra's algorithm and the A* algorithm to quickly calculate routes and navigation.

Drawing Animator   **(C && Assembly)**
University of Toronto, Toronto ON
- Utilized a DE1-SOC board and various peripherals to enable users to draw and animate on a monitor.
- Programmed the board to interface with I/O devices such as a PS2 mouse and keyboard, VGA display, and speakers.
- Implemented polling and interrupts driven by I/O devices for seamless user input and response.
- Displayed animations using Double Buffering with the VGA allowing simultaneous drawing to one buffer and rendering from the other buffer.

Digital Systems || Maze Game   **(Verilog)**
University of Toronto, Toronto ON
- Programmed an FPGA board with Quartus to allow users to enter directional input and solve a maze within a time limit.
- Created a full state table and datapath modules to read and process input from a PS2 keyboard.
- Created a control module to decode 8-bit hexadecimal PS2 keyboard inputs into a 1-bit high/low input for precise directional control.
- Synchronized VGA display with user controls to visualize character position with double-buffered movement.
- Programmed a rate divider to manage system clocks and synchronize frequencies.

EDUCATION

University of Toronto
Toronto, ON
Bachelor of Applied Science and Engineering (B.A.Sc) in Computer and Electrical Engineering + PEY Co-op   **Sep. 2022 – Apr. 2027**
- Pursuing Artificial Intelligence and Mechatronics minors.
- Relevant Courses: Computer and Programming Fundamentals (C/C++), Engineering Strategies and Practice, Calculus 3, Circuit Analysis, Digital Systems, Engineering Mathematics, Hardware Design and Communication, Signals and Systems, Computer Organization, Introductory Electronics, Software Communication and Design, Applied Fundamentals of Deep Learning.
- Dean's List (Fall 2022, Winter 2023, Fall 2023, Winter 2024).
- 3.73 cgpa.

EXTRACURRICULARS

Burnaby Mountain Mantas   **October. 2013 - March. 2022**
Burnaby Mountain Mantas, Burnaby BC
- Competitive Swimmer and Assistant Coach for the club.
- As a swimmer, won numerous podium placements at both regional and provincial levels
- Applied personal experience as a competitive swimmer to better develop similar skills in my swimmers improving their technique and speed.
- Effectively handled large groups of swimmers (10 - 15) ensuring each swimmer was given equal attention creating an inclusive environment.
- Collaborated with the head coach to organize practices fitted to improving each swimmer's individual needs.
- Delivered personalized feedback to each swimmer focused on improving their stroke technique and speed.