Hudson Koyanagi

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EDUCATION

University of Waterloo — Waterloo, ON

Bachelor of Software Engineering, Co-op — September 2022 – April 2027

Relevant Courses: Programming Principles, Data Structures, Methods of Software Engineering, Digital Computers

EXPERIENCE

Software Engineer Intern — London, United Kingdom

Lion's Head Global Partners — June 2023 – August 2023

- Independently designed, developed and tested a comprehensive internal application utilizing React, Node.JS (Express.JS), and MySQL for web development, alongside Python for automated word document generation, enabling efficient project and client tracking while automating memo generation, streamlining internal processes.
- Actively engaged coworkers to gather feedback and fine-tune the application for Lion's Head unique business requirements while emphasizing an intuitive, user-friendly interface.
- Coordinated with the arms-length IT team, to evaluate pricing and deployment options, while consistently reporting project progress and milestones to management, showcasing effective project management and stakeholder communication skills.

Software Developer Intern — London, United Kingdom

Mesmerise VR. — July 2021 –Aug 2021

- Designed and implemented virtual reality interior design elements in Unity with the software team.
- Worked alongside head of the data science team to implement a mood recognition machine learning algorithm in Python.

PROJECTS

32 Bit Emulator | C++ — source code

- Developed an emulator and assembler for a custom 32-bit instruction set, drawing inspiration from the ARM and MIPS ISAs, showcasing expertise in low-level architecture design and programming.
- Designed and implemented a RISC CPU in C++, complete with memory-mapped IO functionality, utilising hardware emulation and system-level programming.
- Created an assembler in C++, enabling the compilation of assembly code into machine code.

Raspberry PI Facial-Recognition | SQL, Python, Tkinter, OpenCV — source code

- A team project to implement a facial recognition "security system" in Python with the OpenCV and facial recognition libraries.
- Responsible for a locally hosted MariaDB SQL database for user management and logs, back-end file management, facial-recognition optimizations, and GUI integration with tkinter.

Socket File Server | Java — source code

- A multi-threaded, socket-based, server-client program responsible for file transfers using Java.
- Used Java Swing for client-side GUI, while server transactions were handled in a separate thread.
- Implemented a custom linked-list file tree to transfer the server side's file structure to the client as well as a RESTful API for GET, POST AND DELETE requests.

TECHNICAL SKILLS

- Languages/Frameworks: C, C++, Java, Python, JavaScript, Bash/ZSH, HTML/CSS, React, NodeJS
- Developer Tools: Postman, Git, SQL, Docker, Valgrind, GDB, JetBrains IDE's, Linux