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.
- 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