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EDUCATION

B.S. Electrical Engineering, Embedded Systems Concentration - University of Washington - Seattle, WA
Expected Graduation: December 2023

A.S. MechaTronics Engineering - Clover Park Technical College - Steilacoom, WA
Graduation: Fall 2019

RESEARCH EXPERIENCE

Research Assistant | Ubiquitous Computing Lab | Faculty Advisor: Shwetak N. Patel | March 2023 - Current

Accessible EyeDropper - Future Work to be completed

Goal: Assess how current Eye Dropper aids counteract lack of finger strength and dexterity errors caused by compounding musculoskeletal disorders and make improvements

- Using OnShape CAD, rapidly designed and produced device prototypes and assessed their feasibility.
- Researched mechanical actuation methods and integrated them into future prototypes.
- Sought out literature that enhanced our perspective of the current technologies already being integrated into other assistive technological solutions.
- Produced solutions based on prior mechanical actuation research and literary review.
- **Current Status:** Mechanical actuations to lessen the required pressure needed to administer a drop of medication has been finalized. Future work is needed to address dexterity problems caused by muscle spasms.

Mobility Device Augmentation - In Progress

Goal: Assess current augmentation techniques that users implement into their mobility devices and create means to lower the skill ceiling for those techniques via digital fabrication.

- Sourced user opinions and augmentation techniques from several communities using advanced search query techniques.
- Sourced information on current medical technologies implemented to address user needs.
- Prepared an IRB protocol for the initial user study, constructed the user study protocol, and aided in constructing the user study questionnaire.
- **Current Status:** We are currently running a user study to gather opinions from users about current augmentation techniques and how satisfied they are with them. We are aiming to understand what thoughts users may have when approaching device augmentation and what we can do to streamline the process.

WORK EXPERIENCE

Undergraduate Software Engineer | UW S.E.A.L Lab | November 2022 – March 2023

- Worked in a team of 3 to develop a website to host an in-lab technical writing assistance application for use by lab personnel.
- Responsible for the structure of the home page, search page, and implementation of the search engine

SAT Math Tutor | Self Employment | August 2022 – Current

- Tutored a student on algebra, geometry, and trigonometry fundamentals for 8 hours every month

SELECTED PROJECT EXPERIENCE

Game Engine | Husky Coding Project | September 2022 - Current

Goal: Lower the skill ceiling of introductory game development by providing a lightweight game engine capable of creating two-dimensional experiences with little to no code required.

- Developed two desktop games to learn game development as a prerequisite to developing a game engine.
- Created entirely using Java, using JavaFX as the main GUI framework to handle all rendering and user interactions.
- Can render multiple objects using canvas layers and threads to handle all timing, updates, and redrawing.

Elderly Fall Assessment | CSE 475 Capstone Project | September 2023

Goal: Create an embedded wearable capable of being worn anywhere on the torso via a medical-grade sticker adhesive with low power consumption, aiming to increase the safety and well-being of elderly individuals whilst providing complete data privacy.

- Led a four-person team on the development of the project.

Arduino Madlib Generator | CSE 474 Final Project | June 2023
- Developed a Madlib generator using Arduino, C/C++, Python, ChatGPT, and various hardware components
- Users choose 5 descriptive words from a list of adjectives using a hardware interface, which would return a Madlib string about the user onto the display

File Search Engine Web Server | CSE 333 Final Project | August 2023
- Built a web server entirely in C/C++ that searches and ranks documents depending on a user's query.
- Able to serve multiple clients using threads to access shared memory in parallel
- Handles both search queries and HTML requests

Campus Maps Web Application | CSE 331 Final Project | August 2023
- Built a web server with Java and TypeScript to provide directions depending on the client's parameters.
- Utilized a Spark Java webserver to handle mapping and path construction.
- Used a React.js and TypeScript web application to host the client webpage.

LEADERSHIP EXPERIENCE

Project Lead | Husky Coding Project - Java Game Engine | September 2022 – Current
- Led an eight-person team to develop a game engine using Java.
- Responsibilities included motivating team members, preparing for team meetings, scheduling team meetings, and researching Java frameworks and technologies.

SKILLS
- Java (3+ years), C/C++ (2+ years), Python (1+ years), JavaScript/TypeScript (1+ years)
- Tools: React.js, Spark Java Framework, Django, Node.js, Arduino, CAD, JavaFX, GoogleTest, GNU, Linux, Windows, Bash, Scripting, JUnit, Git, Maven, Gradle, Makefile, NPM, Yarn
- Welding, 3D Printing, 3D Resin Printing, Wood Working, Composite Fabrics, Robotics, Hydraulics, Drivetrains, Aerodynamics testing

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