SIXUAN (SELENA) HAN

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EDUCATION

Dartmouth College, Hanover, NH   **September 2021 - March 2025**

Major in Computer Science, minor in Human-Centered Design   **GPA: 3.96/4.0**

Awards: magna cum laude; Phi Beta Kappa member; 3 Citations for Excellence; the Jackson Award for Engineering projects

RELEVANT COURSEWORK

Software Design and Implementation; Problem Solving via Object-Oriented Programming; Database Systems; Intro to UI/UX Design; Computer Architecture; Algorithms; Machine Learning & Stats Analysis.

WORK EXPERIENCE

Microsoft Corp., Redmond, WA   **May 2025 –**

Software Engineering on the Secure Platform Foundation Team (Core OS)

Technology: C++, Visual Studio, Azure DevOps, Microsoft 365

● Designing a stress testing framework for the Windows Endpoint Security Platform.

Microsoft Corp., Redmond, WA   **June 2024 – August 2024**

Software Engineering Intern on the Connection Awareness Team (Core OS)

Technology: C#, .NET, XAML, Visual Studio, Azure DevOps, Microsoft Office, Microsoft 365

● Extended the Get Help App to analyze Wi-Fi and provide improvement recommendations for 8 cases for v3 discovery, closing the critical user gap where 48% of Windows users who launched the app with an active WLAN interface were connected to Wi-Fi.
● Strategically identified room for improvements by conducting competitor analysis and defining a 17-page dev design spec.
● Participated in 3 rounds of manual testing and stabilization, ensuring app reliability, and contributed to v2 launching.
● Engineered diagnostic tools for network issues and the app's active listening by leveraging Win32 and WLAN APIs.

PROJECT EXPERIENCE

Flex, Senior Project, Hanover, NH   **September 2024 - March 2025**

Full Stack Software Developer, UI/UX Designer

Technology**:** Swift, SwiftUI, Firebase, Python, AWS, FRP, Scrum, Github Project, mediapipe

● Designed and developed a full-featured Swift frontend with a smart mirror interface, real-time hints, and customizable voice guidance, enabling seamless AI-powered workout assistance.
● Led a 5-person team in a Scrum environment, managing sprints, code reviews, and documentation in Github Project.
● Built and integrated APIs and frameworks, optimizing communication between the Swift frontend and a Python-based AI backend with mediapipe to classify exercises and provide live feedback.
● Engineered a cost-effective cloud deployment by setting up an FRP server on AWS, reducing backend hosting costs by 50x.
● Developed an adaptive hint presentation system, allowing users to personalize real-time feedback formats.

Research Assistant, Reality and Robotics Lab at Dartmouth College, Hanover, NH   **May 2023 - March 2024**

Technology: Python, Javascript, Typescript, Svelte, HTML, CSS, mediapipe, Figma

● Developed an AI dance teaching assistant, which utilizes computer vision to analyze motion and provide instruction.
● Conducted user research, identified target users, proposed layouts and learning modes, and designed user interface.
● Optimized algorithms to improve user experience, such as dance video segmentation by the Laban Movement Model, calculating motion descriptors, and high-quality verbal feedback with LLM and speech generation.
● publication: https://dl.acm.org/doi/10.1145/3586182.3625119

Simulating Alternative Course Election Systems with Auction Theory, Hanover, NH   **April 2023 - May 2023**

Code Designer, Data Analyst

Technology: Python

● Designed an alternative course election system with an auction element for the College with data scraped from the Registrar.
● Applied evolutionary game theory to data analysis to navigate how students' strategies evolve over time and validated assumptions of independence from the survey results.
● Students get over 70% of total utilities with our system, compared to 61% satisfaction of the current system from our survey.

CERTIFICATES

Tools of the Trade: Linux and SQL (issued by Google); Generative AI with Large Language Models (issued by DeepLearning.AI and Amazon Web Service); Microsoft UX Design Professional Certificate (issued by Microsoft); Introduction to Computers and Operating Systems and Security (issued by Microsoft).