Senior Design Project

We decided to create a smart home control interface that focuses on delivering a highly personalized user experience. The system will feature a customizable UI that adapts to individual user profiles, taking into account factors like age, pets, occupation, tech fluency, and potentially more. Our goal is to ensure the interface feels intuitive and tailored to each user's unique needs. The design will include a central dashboard for monitoring connected devices, intuitive controls for managing settings, automation of daily routines, and real-time notifications for important events. We are also considering integrating a voice assistant to enhance user interaction and simplify control. Additionally, we may showcase the app using a 3D model of a home, possibly incorporating VR technology for an immersive, interactive experience.

I am currently a 5th-year Computer Science student with a strong foundation in web development and programming. I've taken courses like Website Management (IT 1040C) and Visual Data Interfaces (CS 5124), which provided me with solid experience working with HTML and CSS. Right now, I'm enrolled in a Machine Learning course (CS 5137), which will be useful for implementing AI features in our projects. Although we haven't officially decided on a programming language for the project, I've already completed a Python Programming course (CS 2021), so I am comfortable using Python if we choose it. My coursework has given me practical skills that I'm eager to apply in real-world applications. This blend of web development, machine learning, and programming knowledge positions me well for contributing to our project.

I spent four CO-OP terms working with a VR/Web development team, primarily focused on VR solutions for patients. While my official role was as a QA team member, I frequently contributed to programming tasks for both the Web development and Simulation (VR) development teams. During my time in QA, I gained significant experience working with Jira, where I wrote test cases, managed test executions, and created detailed bug reports. In addition to my QA responsibilities, I had hands-on involvement in both Web and VR development projects. I became proficient in using Unity for VR development and contributed to various features across both platforms. This diverse experience has given me a well-rounded skill set in both quality assurance and development.

I am highly motivated to participate in this project because it combines cutting-edge technology with personalized user experiences, two areas I am passionate about. The idea of creating a smart home interface that adapts to individual preferences excites me, as it holds the potential to enhance people's daily lives through convenience and automation. I am particularly drawn to the challenge of designing a system that caters to a wide variety of users, from tech-savvy individuals to those who may be less familiar with technology. This project offers an opportunity to push the boundaries of what smart homes can do, making them not only functional but also deeply intuitive and accessible.

My preliminary approach to designing this solution will involve user-centered design principles, starting with research to understand the diverse needs and behaviors of potential users. I plan to focus on simplicity and ease of use, ensuring that the interface is intuitive and customizable. By integrating features like real-time notifications, a voice assistant, and a dynamic UI, I aim to create a seamless experience. I expect our system to significantly improve smart home management by making it more personal and efficient. To self-evaluate, I will consider user feedback and usability testing as key indicators of success. I will know I've done a good job when the system not only functions as intended but also receives positive feedback for its adaptability and ease of use.