Siddiqui, Sultan Sadiq Husain

Computer Science, class of 2023

Production and Consumption of Renewable Energy,

Group B – AR/VR Control

30.12.2022

This project aims to improve energy efficiency and reduce energy waste in homes through the use of smart devices and software that monitors and controls energy usage. The goal is to help the homeowners save money on energy bills and reduce their carbon footprint. As a member of the AR/VR control group my primary responsibility was to help users become more aware of their energy consumption by creating an attractive interface that connects to the smart devices and displays energy usage in a visual and graphical manner. I along with my team were tasked to provide users with a better understanding of their energy consumption in different parts of their home through the use of gamification concepts for energy management.

The first task for us, the AR/VR team was to research about 10 applications, 5 from the App Store and 5 from the google platy store, that utilize the AR technology for monitoring proposes. We also had to provide an explanation for their performance and research about their field of activity. Furthermore, we were also required to investigate if there are any AR solutions for tracking energy consumption and provide a description of them. Additionally, we also had to outline the different options that these apps offered to users and the number of users that these apps had. After collecting the required data, the next task for us was to design a story using the data collected, and to try and answer the questions such as what are the gains for a customer with the existing applications, what are the major challenges that the customers face with the current applications, how our suggestion and solution would improve the existing customers job, what benefits would our solutions bring and how we would improve the current situation. The third task consisted of creating a solid business plan for the solutions that we had introduced. Additionally, we were also tasked with finding a potential partner that would help us with the development tasks.

The final significant and the most time-consuming task entailed creating a working prototype of an AR application that would permit users to conveniently access and view electricity consumption data of buildings. We decided to go with a web application using the ARJS library of JavaScript. Even though the project is still under development, it has the potential to be a valuable tool for efficiently managing resources on campus by enabling responsible parties to obtain readings quickly and accurately. I was responsible for the frontend developing the front end of the project and figuring out the best way to incorporate ARJS with our project.

As a computer science major, this project really aligned with my major as it gave a chance of applying the technical knowledge gained from my classes, especially the software engineering course into a real-life project. Furthermore, working in this project also helped me develop many skills such as communication, market analysis, and teamwork. I was able to work with a team in which every individual had their own ideas of how the design of the web application should be to what the general approach should be, and we ended up following the best plan, which consisted of bits and pieces from everyone’s plans. In addition to that, this project not only enhanced my HTML, CSS and JavaScript skills but also allowed me to learn and practice a new library in ARJS which will help me in my professional career as a computer science enthusiast as well.

To conclude, working in this project was a fun experience and did come with a somewhat steep learning curve. It is also rewarding to know that I have applied my skills and knowledge and have contributed even though just a little bit to the betterment of the world that I live in. ARJS and this project will also be a very strong addition to my cv, as I look forward to applying this experience and knowledge in the later parts of my career as well.