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Individual Capstone Assessment

This senior design project is focused on performing a statistical analysis of the card game, Euchre. The goal is to determine the win probability of the player and determine the optimal move. Given that Euchre has an element of chance with the card distribution, there there is not necessarily a single best move. This means that we might have to design an AI in order to simulate games to calculate the best move to determine possible strategies. This project will involve utilizing statistical analysis as well as AI in order to successfully accomplish the goal. The result will be shown in a web application in order to display the information during the game.

Several courses that I have taken will be beneficial for working on this project. I am currently taking User Interface (CS-6067) which will be useful in helping with the layout and structure of the web application. I have also taken Web Application Programming and Hacking (EECE-4005) where I gained experience in HTML, CSS, and JavaScript, as well as some different frameworks which could be useful in the development of this project. I have also taken Database Design(CS-4092), which has given me experience in SQL, which will be useful if this project requires storing data such as the bot’s analysis. Finally, I have also taken Software Test & QA(EECE-6032) which will be useful for creating some tests to ensure the stability of the web application and the bot. What I learned from these and many other courses will be beneficial to the development of this project.

My past co-ops have all been for Siemens Digital Industries as a Software Developer. With Siemens, I primarily developed in C# while also using Python to create scripts to automate or speed up some tasks. A lot of my time was spent working within the architecture of complicated software, which provided me with good experience. My experience at Siemens helped me to grow my collaboration and communication skills, as well as improve my technical skills. This will be applied as we collaboratively create the software architecture of our Euchre web application. While predicting the optimal best move in Euchre and creating a web application to go with it will be a challenging task, I think my experiences at Siemens and what I learned from my courses will be beneficial.

There are many reasons why I am excited and motivated to work on this project. One, Euchre has been my favorite card game for many years. I have loved learning the strategy and figuring out how certain moves are better than others and why. Combining this with the analysis of Euchre that we will develop is exciting. Not only will this project be interesting to learn about the best moves in Euchre, but I will also learn a lot. I will gain a lot of experience in many different areas such as UI, AI, and web development. It’s exciting to be able to apply my technical skills and all that I have learned into a project centered around Euchre, combining my personal interests with everything I’ve learned.

With this project, we want there to be a web application that displays the best move with the use of a bot that can simulate games. This means that we will most likely have to have a way to play Euchre in the application and display the analysis. Our initial approach to this project is to fully understand Euchre and all of its rules and strategies, which is an important element to designing the bot. We will also have to look into the design of the web application and decide on a framework to use. Each of us will focus on specific aspects of the project while also collaborating to ensure we are on the same page and making steady progress. We can evaluate the project by evaluating the accuracy of the bots’ decisions and the performance of the web application. If we have a functional and responsive web application with a functioning bot that correctly simulates and projects the best moves for a Euchre game, the project can be considered successful.