Marco Rojas (marcor2)

Jack Arndt (jarndt2)

Timothy Green (trgreen2)

Automated Casino Assistant (Odds Booster)

Before heading to the casino, individuals need to assess how much money they are willing to lose, since as the saying goes, “The house always wins”. Or do they? Is there potentially a way to bring the casino games to the comfort of your home and train/optimize your strategies to ask a different question, “How much money should I win?”

The Automated Casino Assistant (or *Odds Booster* for a more marketable name) is a kit designed to help players learn and manage casino games such as Blackjack or Texas Hold’em. The kit involves a central communicable device along with a custom deck of cards which will be used to determine the best possible move for each player along with the outcome of each hand of the game. This device is an innovation as it brings both the ease and simplicity as well as the ability to learn the game that can be provided by a virtual game into the superior enjoyment and atmosphere of a physical game. Digital poker tables that provide a similar experience exist but cost thousands of dollars. Our design achieves this functionality without an expensive custom table and while allowing for physical cards and chips.

The first aspect of the device is the card reading ability. Each card in the deck will have a thin RFID tag on it. An RFID tag reader will be used to determine which cards are in play at which time. By selecting a game and the number of players, the assistant will know which card is going to which player after being swiped and dealt and will keep track of each player’s hand. We will be looking to create our own deck of cards that will perform at casino quality, while being able to be scanned and communicated to the central display screen. There are other possible ways to indicate the cards being played on the table, such as a light sensor or movement detector. For the time being, an RFID tag and scanner system is the desirable option.

The assistant will have a central display to instruct the group on what to do next in the game as well as determining the winner at the end of each hand. During a hand, the assistant will be able to suggest a move to the player using statistical analysis and the information available to the player. This display will be able to detect the cards on the table using the communication system set up with the custom deck, crunch the numbers to give optimized options, and give the results to users in a sensible fashion. We can either make our own device that can handle this, or simply make it an app on the App Store (which would only require the purchase of the custom deck/scanner if we went this route).

There are other games that don’t require the use of cards, such as games with dice (craps) or wheel (roulette). These can also be implemented in our design potentially if the interest is there. The likely outcomes and payouts of these games are just as important as the card games, just with less variability than cards.

Assuming just the usage of cards, to successfully complete this project, we will need a reliable way to know which cards are being played on the table. Once that is set up, a wireless communication network needs to set in place for the cards on the table to be sent to our device that will be able to reliably and correctly give optimal decisions and give these readings to the user. This will need to be stress tested tirelessly and need clear and concise communication to the users in order to make this work. There are certainly more things that can be added to make this project more complex, this is simply the baseline idea of what we would like to accomplish.

Web Board Discussion URL: https://courses.engr.illinois.edu/ece445/pace/view-topic.asp?id=70130