

## **Background:**

Poker is a game of luck, nuance, intricacies, and strategy. While you cannot control the cards you get and the board that's dealt, understanding how players think and patterns within the game can be complex and very important in making smart and valuable decisions.

WinningEdge™ is a strategy optimization tool for online, low-stakes Texas hold'em players. The application will provide real time probabilities and suggest action based on an ML algorithm trained using historical data. In using WinningEdge™, players will be able to make better informed decisions with the goal of winning and being profitable.

## **User Profile:**

The primary user of this software will be online, low-stakes, heads-up texas hold'em poker players. The players will want to use the tool to determine optimal strategy including bet/fold decisions at the river stage of the game as well as bet magnitude. The users will require the tool to be easy to use and require minimal input and respond rapidly such that it will inform their decisions and strategies in real time. The players will be of a variety of technical skill levels and such the software should be designed for users of minimal technical skill.

Another important user is the technician. They are responsible for maintaining and updating the software. Some possible updates include adding more data, creating potential plots and retraining the model with the extra data. They would be very technical and have a deeper understanding of the code and repository structure.

## **Data Sources:**

The main data source that we are using are the ~30,000 raw text files (.txt) that were bought and provided by 888poker.com. In these files, the data is stored as

## **Use Cases:**

Use Case 1:

- System: Prompt user to provide info about their own hands
- User: Provide initial hands
- System: Prompt user to provide info about their opponent's hands
- User: Provide opponent's hands
- System: Provide pre-flop probabilities and action suggestions
- System: Ask user whether to proceed to Flop
- User: "Yes" or "No"

If "Yes"

- System: Prompt user to enter Flop community cards
- User: Provide Flop
- System: Provide probabilities and action suggestions
- System: Ask user for opponent's action
- System: Decide whether proceed into the next round