

Monte Carlo Simulations in Poker and Gambling

Arhan Surapaneni, Siddhant Karmali, Mason Chen, and Saloni Patel
Stanford Online High School

Abstract

This project applies the Monte Carlo Simulation, the authors were able to take a deeper look inside the human mind, with modern approaches to computer programming. The game of poker uses key strategies of wit and deception, all in all ending with the sickness of gambling. The Monte Carlo Simulation uses the programming language Python to set up a 6 player game of Poker with a 16 card partial deck using the various face cards. This game counts only the full-house, 3 of a kind, pair, and high cards for winning combinations to maximize the data significance. In this game these characters have different thresholds in categories like checking, folding, and even betting, which is edited using various variables and wagers applied through a complex malleable percent confidence level interface in an effort to model real human psychology. These confidence levels affect how these players participate in the game. This results in players that are concise and specific, only betting when the cards have higher chances of winning, to players that bet no matter the cards that are presented. This program allows for numerous simulated rounds in seconds, while making advanced calculations on winning probability, and intricate hypothesis/correlation tests to deduce that gambling is not only harmful to the mind, but economically non-beneficial. This is only the first stepping stone for the possibilities that this simulation can explore, offering countless applications that simply have no limits.