One Piece For Two
PC against PC

To delve into various theoretical aspects, a MATLAB program was developed, wherein the computer engages in One Piece For Two against itself (computer versus computer). The program explores each move up to a depth of 4 moves, meaning it explores potential winning scenarios by analyzing all possible moves up to 4 moves ahead from the current move.

Among the topics explored is whether there exists an advantage for the player initiating the game. Based on the current dataset (all moves for more than 3500 games), it appears that such an advantage may not be evident. In 50.9% of the cases, the starting player wins the game. This percentage is not significantly different from the 50% expectancy value, suggesting no discernible advantage for the starting player. However, it's crucial to acknowledge a potential caveat – it cannot be ruled out that a program equipped with more enhanced playing strategies, would unravel an advantage or a disadvantage for the player starting the game.

In 37% of instances, the computer programs attain a winning position (against itself) by strategically placing a game piece on the board at move x, ensuring a certain victory at move $x+4$ (the maximum depth the program can explore, taking approximately 18 seconds per move). Exploring machine learning/AI techniques using the current dataset could be fascinating, determining if such winning moves can be predicted at move x without exhaustively analyzing all possible moves up to move $x+4$. In addition to its theoretical significance, this could pave the way for an app version of the game for mobile devices, catering to users who prefer swift moves, especially in 'expert' mode against the app

The author is open to collaborate on the further theoretical analysis of the game. The author can be contacted at lasters.ignace@gmail.com