

Slot Machine 2 - Simulation Analysis

Simulation Overview

This report presents the results of the simulation titled 'Slot Machine 2 - Simulation Analysis', run on 2024-08-11 14:14:37.

The simulation was conducted using the following slot machine configuration:

Slot Machine Payout Probabilities:

Line 1: [0.1640456833719395, 0.3074956171271478, 0.33945938252487634, 0.1889993169760363]

Line 2: [0.059768497790104944, 0.23171890880957213, 0.3896633931041203, 0.3188492002962026]

Line 3: [0.13051347259905818, 0.49953906620418564, 0.31944633217321533, 0.05050112902354077]

Rewards: [0, 2, 5, 10]

Number of Trials: 100

Number of Strategies: 5

Summary Statistics

Strategy: FixedBetStrategy

Description: Fixed bet strategy: always bet the same amount.

Win Rate (Mean): 100.00%

Average Number of Spins: 51.11

Final Stake (Mean): 523.62

Final Stake (Median): 511.50

Final Stake (Standard Deviation): 25.74

Strategy: KellyCriterionStrategy

Description: Kelly criterion strategy: calculates the optimal bet size based on the probability of winning and the payout ratio.

Win Rate (Mean): 100.00%

Average Number of Spins: 9691.69

Final Stake (Mean): 5046.05

Final Stake (Median): 5040.00

Final Stake (Standard Deviation): 21.87

Strategy: MartingaleStrategy

Description: Martingale strategy: double the bet after each loss, reset to initial bet after each win.

Win Rate (Mean): 8.00%

Average Number of Spins: 787.97

Final Stake (Mean): 401.92

Final Stake (Median): 0.00

Final Stake (Standard Deviation): 1369.87

Strategy: ReverseMartingaleStrategy

Description: Reverse Martingale strategy: double the bet after each win, reset to initial bet after each loss.

Win Rate (Mean): 9.00%

Average Number of Spins: 764.57

Final Stake (Mean): 451.54

Final Stake (Median): 0.00

Final Stake (Standard Deviation): 1443.04

Strategy: FibonacciStrategy

Description: Fibonacci strategy: bet according to the Fibonacci sequence.

Win Rate (Mean): 2.00%

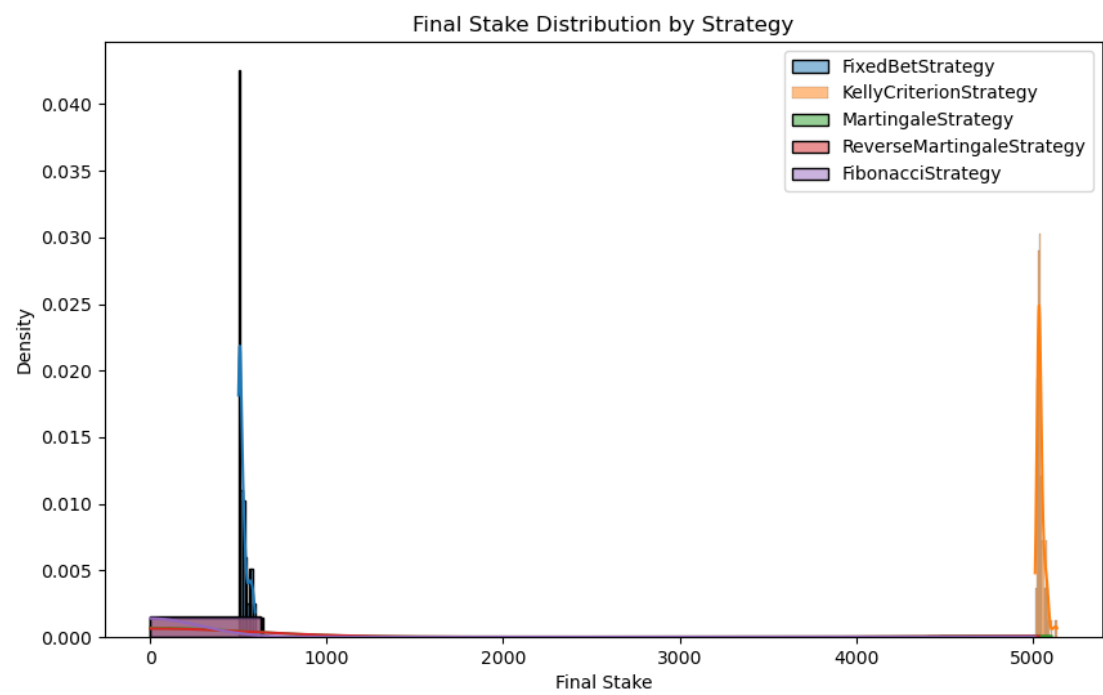
Average Number of Spins: 807.02

Final Stake (Mean): 100.23

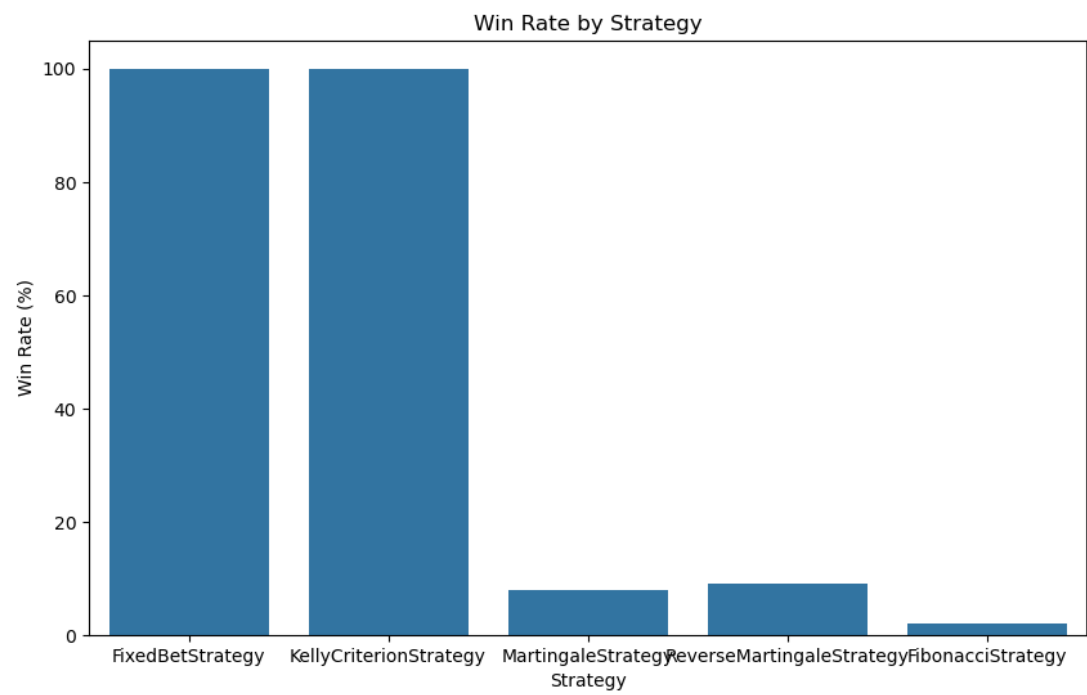
Final Stake (Median): 0.00

Final Stake (Standard Deviation): 705.14

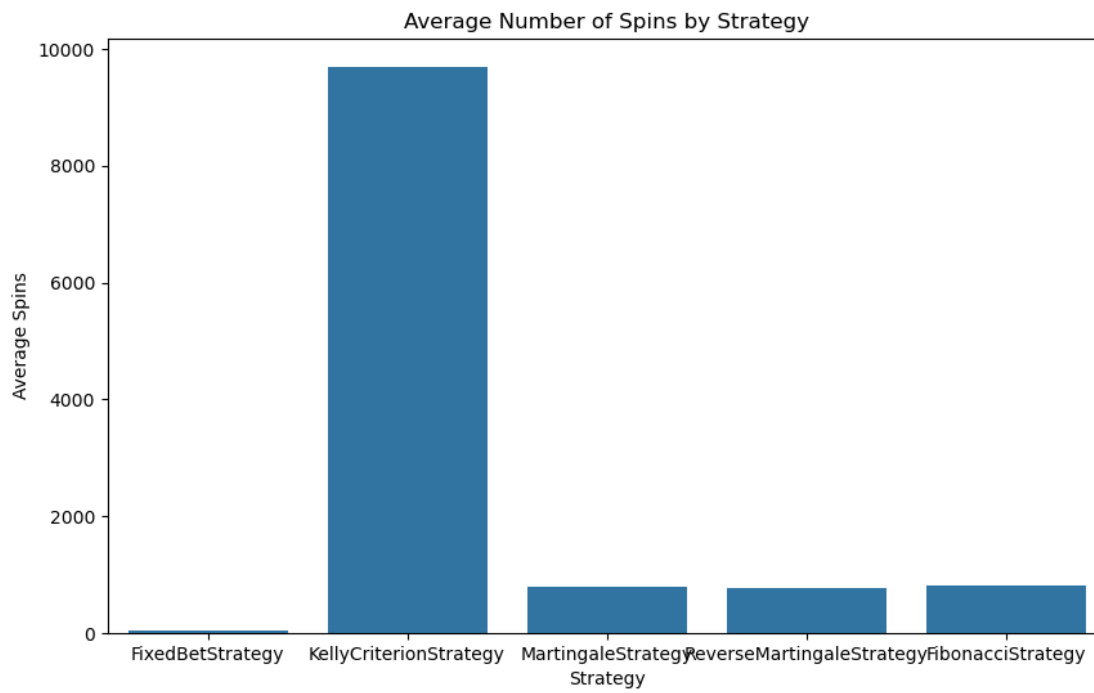
Visualizations



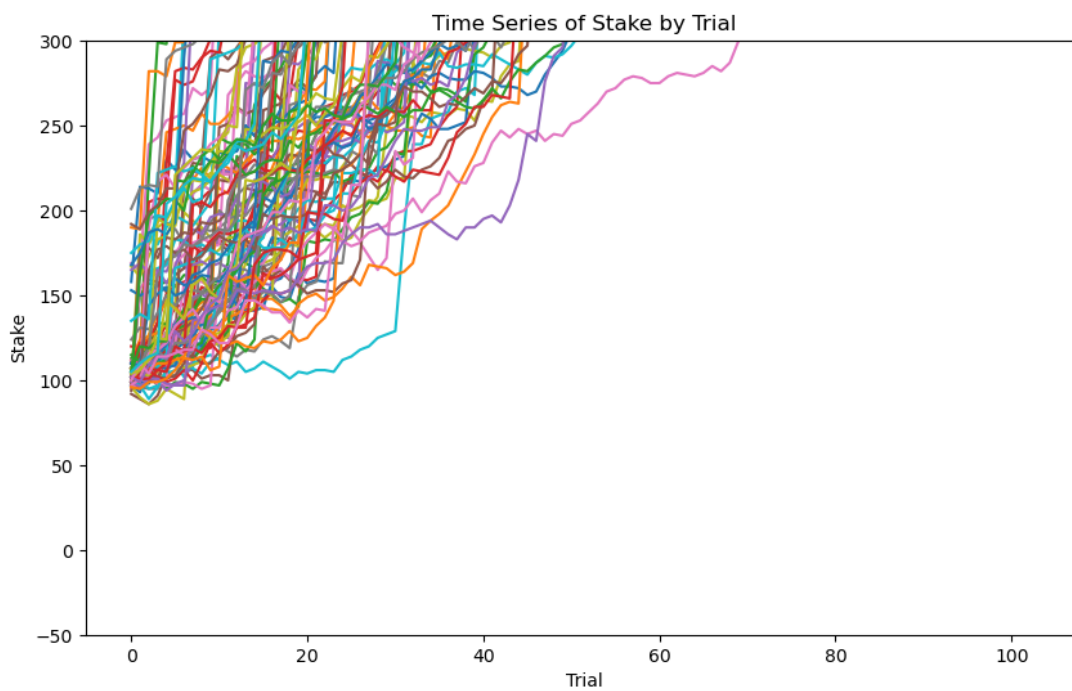
Distribution of final stakes for each trial - Strategy: FibonacciStrategy



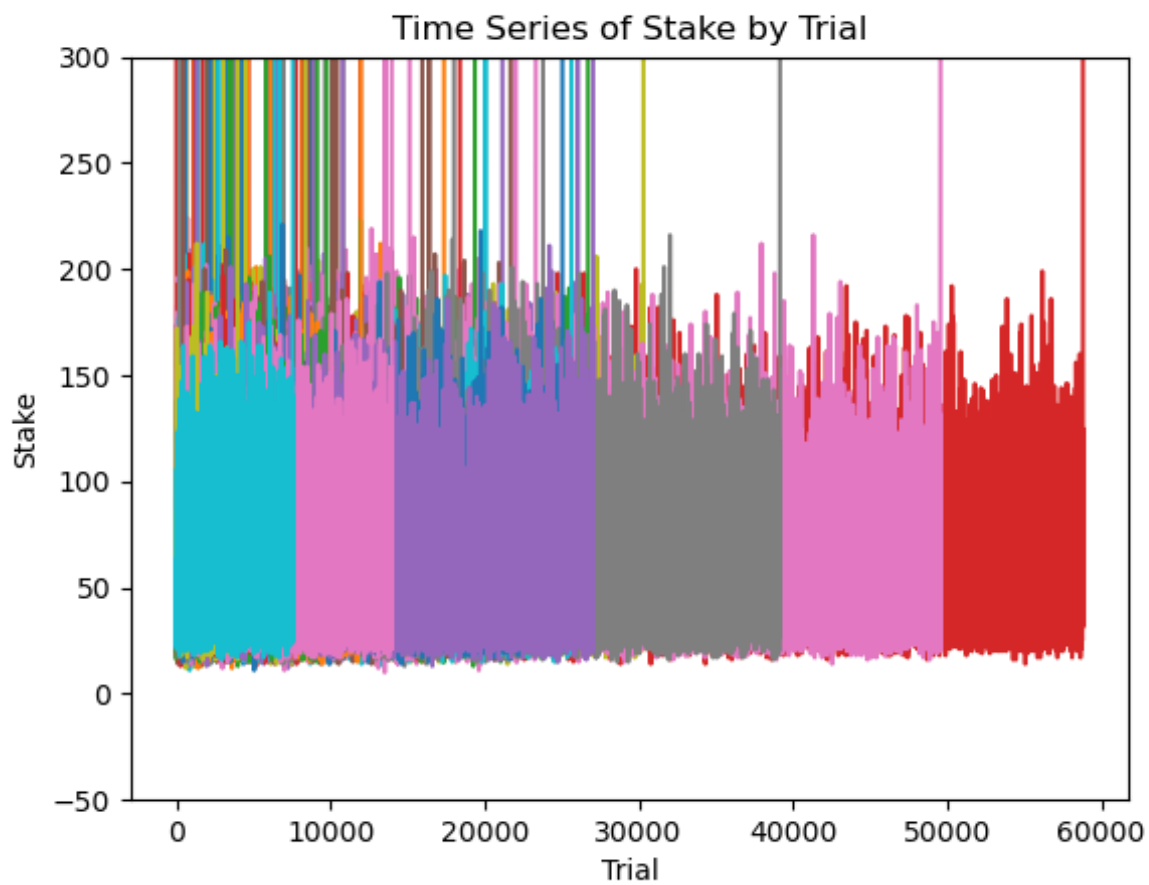
Win rate for each trial - Strategy: FibonacciStrategy



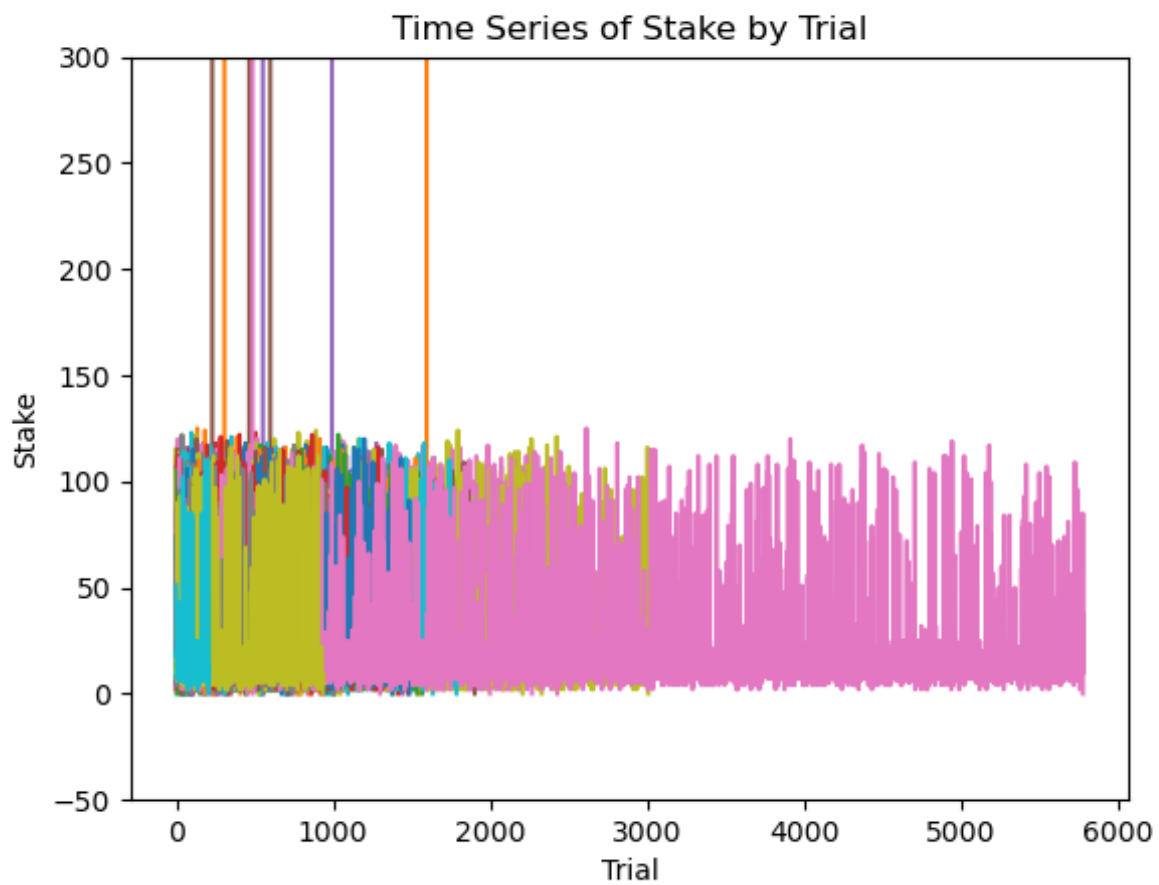
Average number of spins for each trial - Strategy: FibonacciStrategy



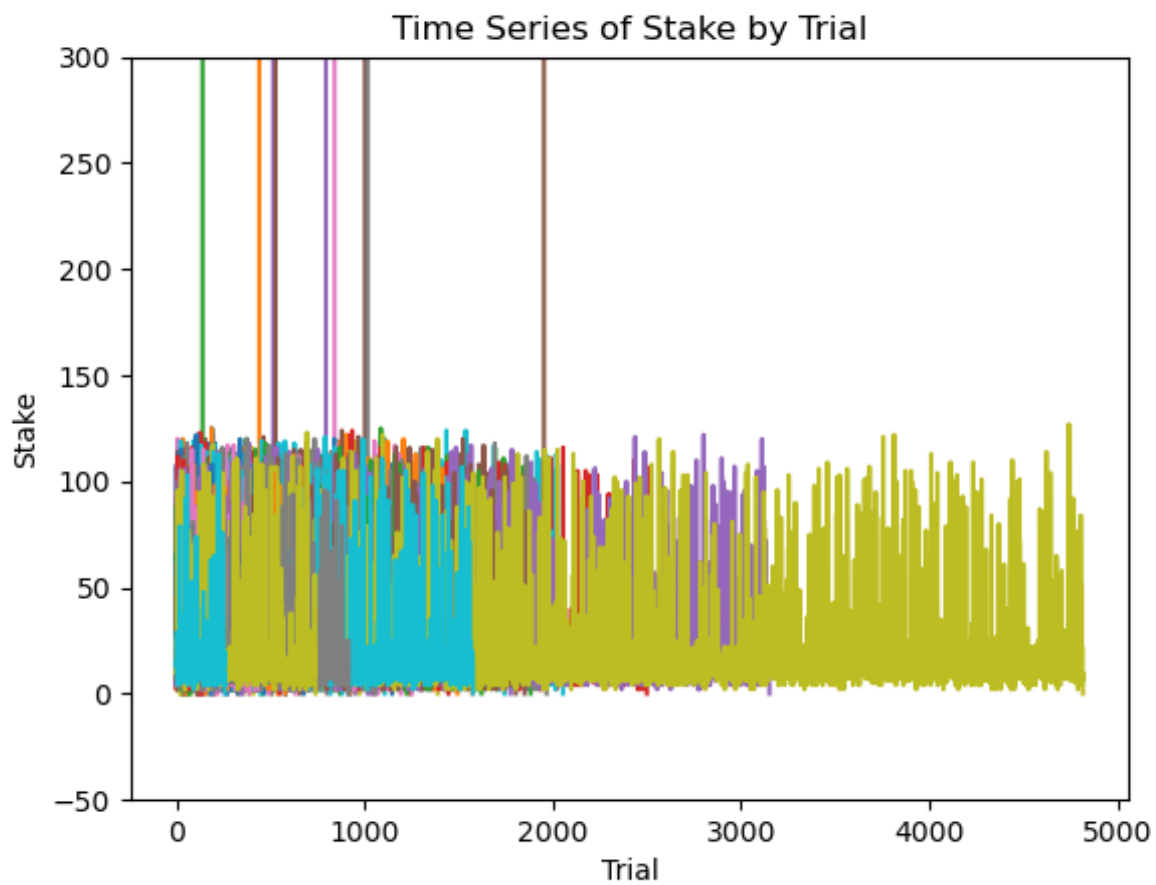
Time series of gain for Fixed Bet Strategy - Strategy: FibonacciStrategy



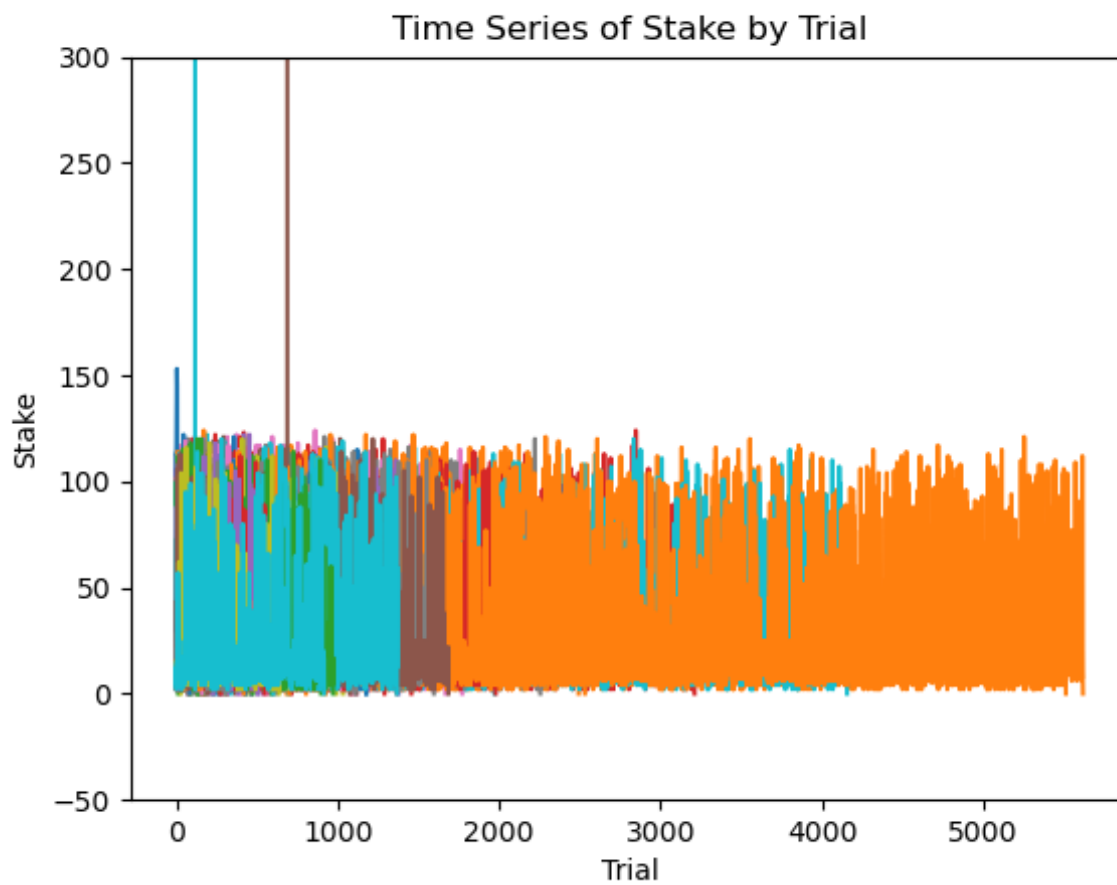
Time series of gain for Kelly Criterion Strategy - Strategy: FibonacciStrategy



Time series of gain for Martingale Strategy - Strategy: FibonacciStrategy



Time series of gain for Reverse Martingale Strategy - Strategy: FibonacciStrategy



Time series of gain for Fibonacci Strategy - Strategy: FibonacciStrategy