

# Moving Average + Z Score Strategy

Mihika Shrivastava

# Introduction

- Goal: Develop a trading strategy that combines trend-following with statistical significance.
- Strategy focuses on short-term momentum while avoiding small, insignificant price moves
- Applied to Apple (AAPL) stock from Jan 2022 – Jan 2024



# How it Works

## Moving Average Crossover:

- Buy when short-term MA crosses above long-term MA
- Sell when short-term MA crosses below long-term MA

## Z-Score Filter

- Calculate z-score of recent returns over a 10-day window
- Trade only when the z-score is extreme ( $>1$  or  $<-1$ ), indicating a statistically significant move

## Execution

- Signals are executed the following day
- Strategy avoids minor fluctuations and focuses on strong, meaningful trends

$$Z = \frac{x - \mu}{\sigma}$$

# Results and Analysis

## Returns comparison:

- \$1 invested in market: baseline growth
- \$1 following strategy: green line shows hypothetical performance

## Analysis:

- More stable than the market due to the avoidance of small fluctuations
- More suited for short-term use as the strategy looks for spikes, and would likely miss long-term gradual trends

