

# Stock\_Kelly\_Fraction\_Chart

September 29, 2021

## 1 Stock Kelly Fraction Chart

```
[1]: # Library
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt

import warnings
warnings.filterwarnings("ignore")

from pandas_datareader import data as pdr
import yfinance as yf
yf.pdr_override()

[2]: start = '2019-01-01' #input
end = '2020-07-01' #input
symbol = 'AMD' #input

[3]: stocks = yf.download(symbol, start=start, end=end)['Adj Close']

[*****100%*****] 1 of 1 completed

[4]: stocks_returns = stocks.pct_change().dropna()

[5]: def kelly_fraction(stock_returns):
    # returns = np.array(stock_returns)
    wins = stock_returns[stock_returns > 0]
    losses = stock_returns[stock_returns <= 0]
    W = len(wins) / len(stock_returns)
    R = np.mean(wins) / np.abs(np.mean(losses))
    kelly_f = W - ( (1 - W) / R )
    return kelly_f

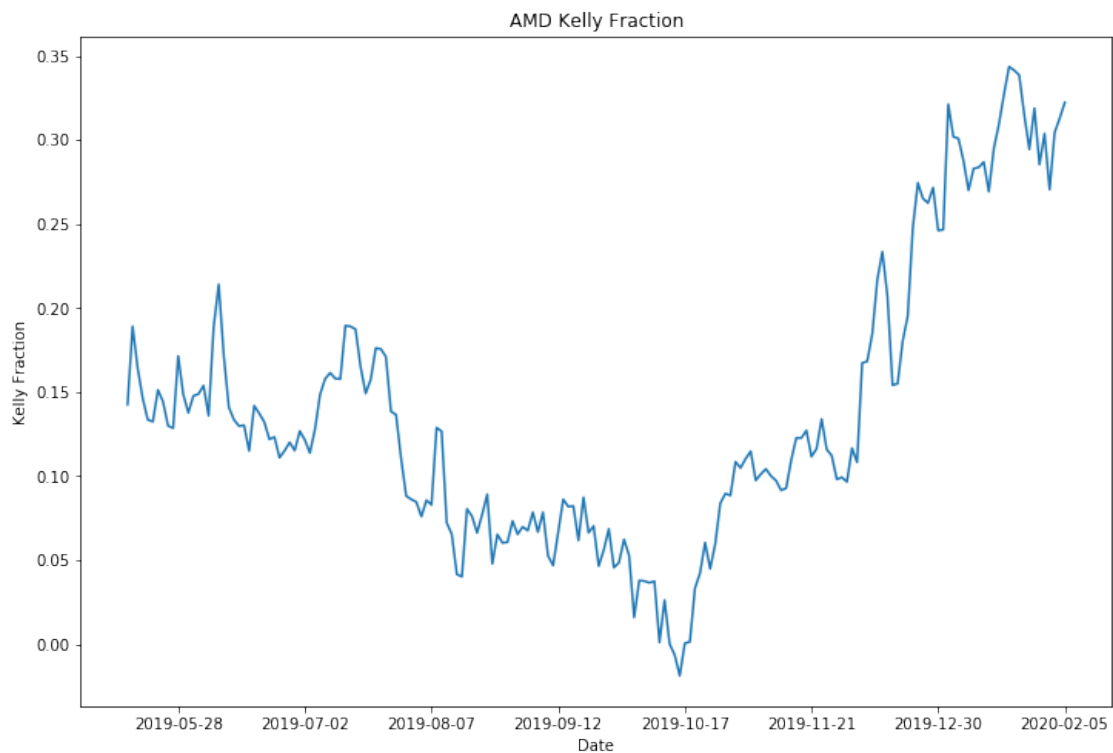
[6]: # Compute the running Kelly Fraction
running = [kelly_fraction(stocks_returns[i-90:i]) for i in range(90,
    len(stocks_returns))]
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# Plot running Kelly Fraction up to 100 days before the end of the data set
_, ax1 = plt.subplots(figsize=(12,8))
ax1.plot(range(90, len(stocks_returns)-100), running[:100])
ticks = ax1.get_xticks()
ax1.set_xticklabels([stocks.index[int(i)].date() for i in ticks[:-1]]) # Label
    ↪ x-axis with dates
plt.title(symbol + ' Kelly Fraction')
plt.xlabel('Date')
plt.ylabel('Kelly Fraction')

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```
[6]: Text(0, 0.5, 'Kelly Fraction')
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```
[7]: kf = kelly_fraction(stocks_returns)
kf
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[7]: 0.12757930844285986
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[8]: running
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[8]: [0.14264599630942115,
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