PRICE PREDICTION

for the Stock Market

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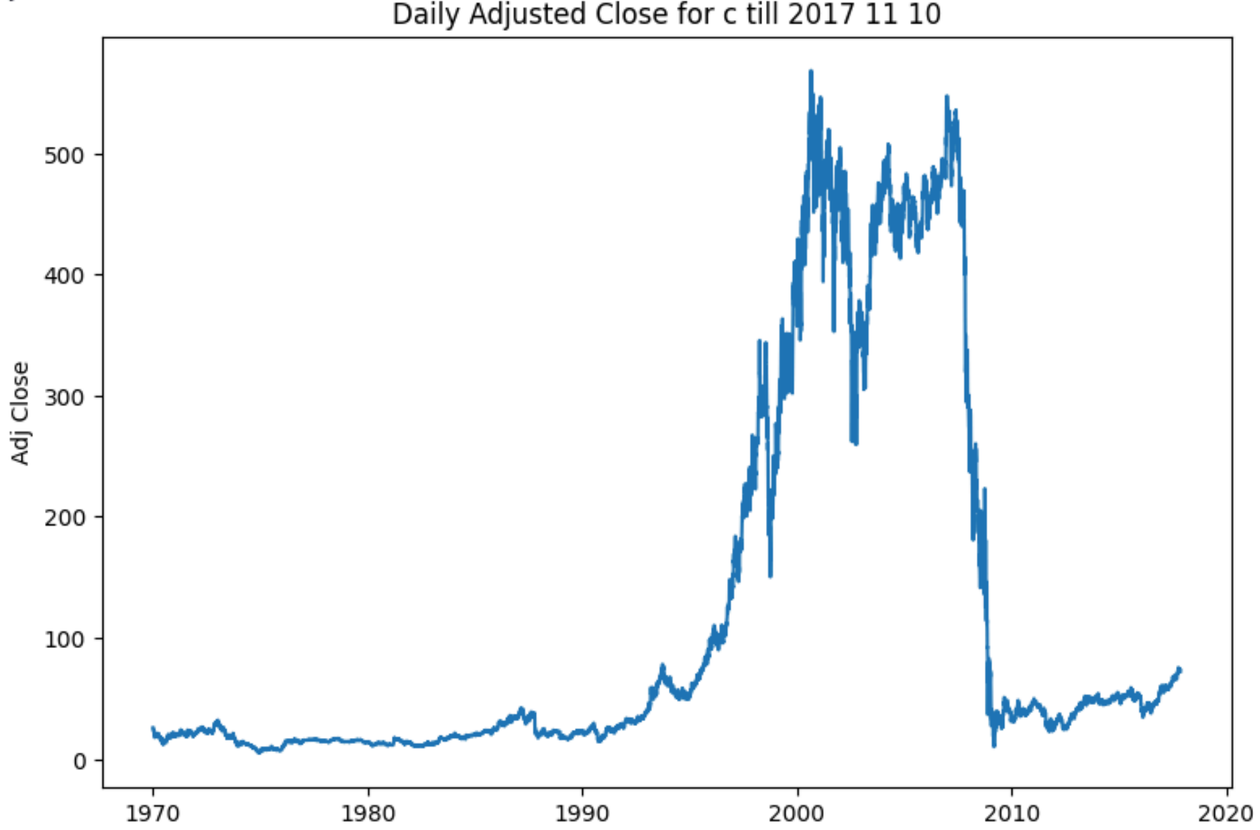

RISK & UNCERTAINTY

PROBLEM

Inherent risk of buying wrong asset that goes down, or buying at wrong time when everything goes down.

PROPOSED SOLUTION

To mitigate the risk of asset going down is to predict the price of an asset using Data Science. I am going to do it for 3 months or longer using Reccurrent Neural networks and Long Short Term Memory (LSTM) models with 2 approaches: prices only and prices with financialstatements.

DATA

2 DATASETS

01 “HUGE STOCK MARKET DATASET”

Daily adjusted Open, High, Low, Close prices and volume from 1970s-80s to 2017 11 10

02 “FINANCIAL STATEMENTS OF MAJOR COMPANIES”

very narrow list of selected companies with financial statements from 2009 - 2023

01

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Date,Open,High,Low,Close,Volume,OpenInt
1984-09-07,0.42388,0.42902,0.41874,0.42388,23220030,0
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1984-09-17,0.45718,0.46357,0.45718,0.45718,53755262,0
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02

Year	Company	Category	Market Ca	Revenue	Gross Prof	Net Incom	Earning Pe	EBITDA	Share Hol
2022	AAPL	IT	2066.94	394328	170782	99803	6.11	130541	50672
2021	AAPL	IT	2913.28	365817	152836	94680	5.61	120233	63090
2020	AAPL	IT	2255.97	274515	104956	57411	3.28	77344	65339
2019	AAPL	IT	1304.76	260174	98392	55256	2.97	76477	90488
2018	AAPL	IT	748.54	265595	101839	59531	2.98	81801	107147
2017	AAPL	IT	868.87	229234	88186	48351	2.3025	71501	134047
2016	AAPL	IT	617.59	215639	84263	45687	2.0775	70529	128249
2015	AAPL	IT	586.86	233715	93626	53394	2.305	82487	119355
2014	AAPL	IT	647.36	182795	70537	39510	1.6125	60449	111547
2013	AAPL	IT	504.79	170910	64304	37037	1.42	55756	123549
2012	AAPL	IT	500.61	156508	68662	41733	1.5775	58518	118210
2011	AAPL	IT	376.4	108249	43818	25922	0.9886	35604	76615
2010	AAPL	IT	296.89	65225	25684	14013	0.5411	19412	47791
2009	AAPL	IT	189.8	42905	17222	8235	0.3243	12474	31640
2023	MSFT	IT	2451.23	211915	146052	72361	9.68	102384	206223
2022	MSFT	IT	1787.73	198270	135620	72738	9.65	97843	166542
2021	MSFT	IT	2525.08	168088	115856	61271	8.05	81602	141988
2020	MSFT	IT	1681.61	143015	96937	44281	5.76	65755	118304

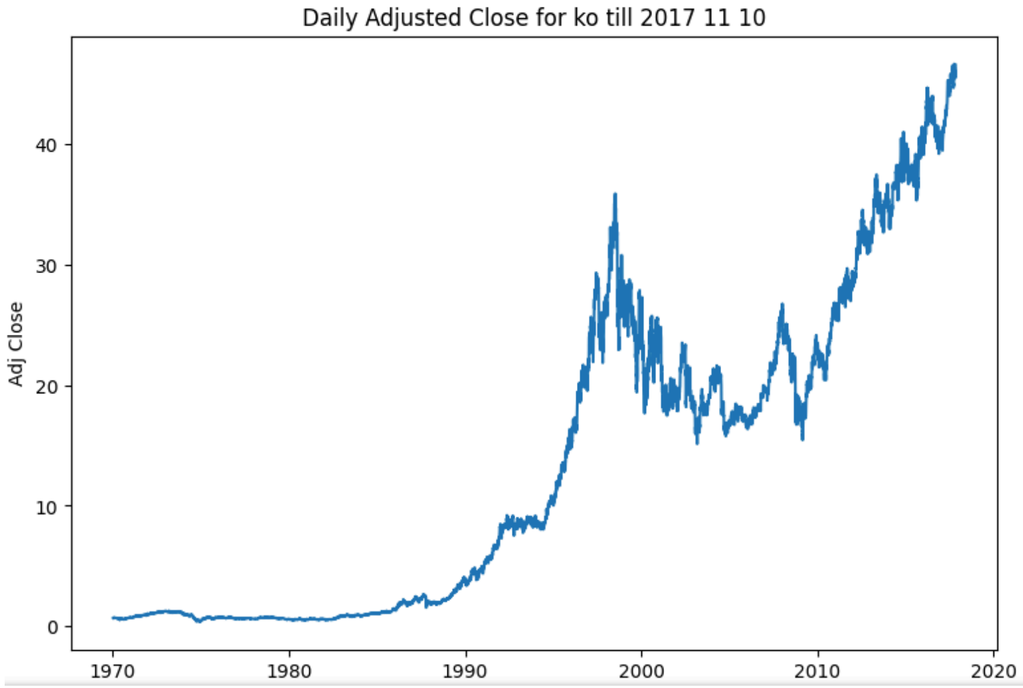
CHOSEN STOCKS AND ETFS

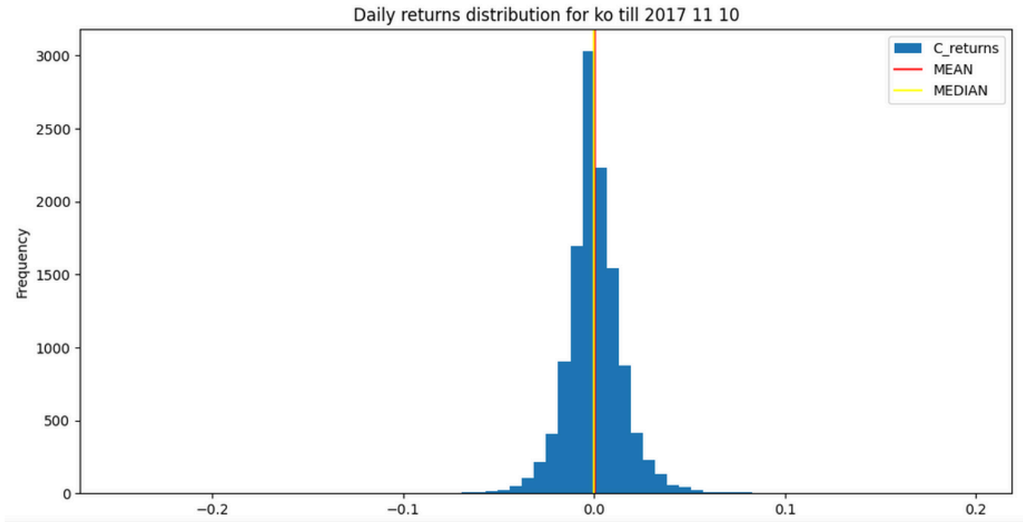
46 so far

- STOCKS FROM FINANCIAL STATEMENTS DATASET
- DIVIDEND STOCKS
- DECLINING STOCKS
- MAIN MARKETS ETFS

EDA

- QUICK CHECK FOR DUPLICATES
- GOT GENERAL UNDERTANDING OF THE DATA STRUCTURE AND BASIC STATISTICS
- CONVERTED DATE COLUMN TO DATETIME
- CALCULATED DAILY RETURNS
- CREATED CHARTS FOR PRICES AND DAILY RETURNS





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NEXT STEPS

- BUILD SMA FOR ADJUSTED CLOSING PRICE
- INTEGRATE FINANCIAL METRICS FROM THE FINANCIAL STATEMENT DATA
- TRAIN RNN AND LSTM MODELS FOR TIME SERIES FORECASTING FOR PRICES ONLY
- TRAIN RNN AND LSTM MODELS FOR TIME SERIES FORECASTING FOR PRICES AND FINANCIAL STATEMENTS
- ASSESS MODEL ACCURACY USING MAE OR OTHER METHODS OR VS. BENCHMARK SMA, FOCUSING ON PREDICTION FOR 3 MONTHS OR LONGER

EXPECTED RESULTS

- PERFORMANCE COMPARISON OF 2 DIFFERENT MODELS OVER GROUPS OF STOCKS AND ETFS
- HIGHLIGHT HOW INTEGRATING TIME SERIES AND FINANCIAL STATEMENTS CAN ENHANCE PREDICTIVE CAPABILITIES

GET IN TOUCH

Thank You for Attention

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