테슬라 주식 분석과 예측

2015107179
전산통계학과
남선우

데이터

Tesla, Inc. (TSLA)
NasdaqGS - NasdaqGS Real Time Price. Currency in USD

Add to watchlist

1,136.99 +55.07 (+5.09%)
At close: 04:00PM EST

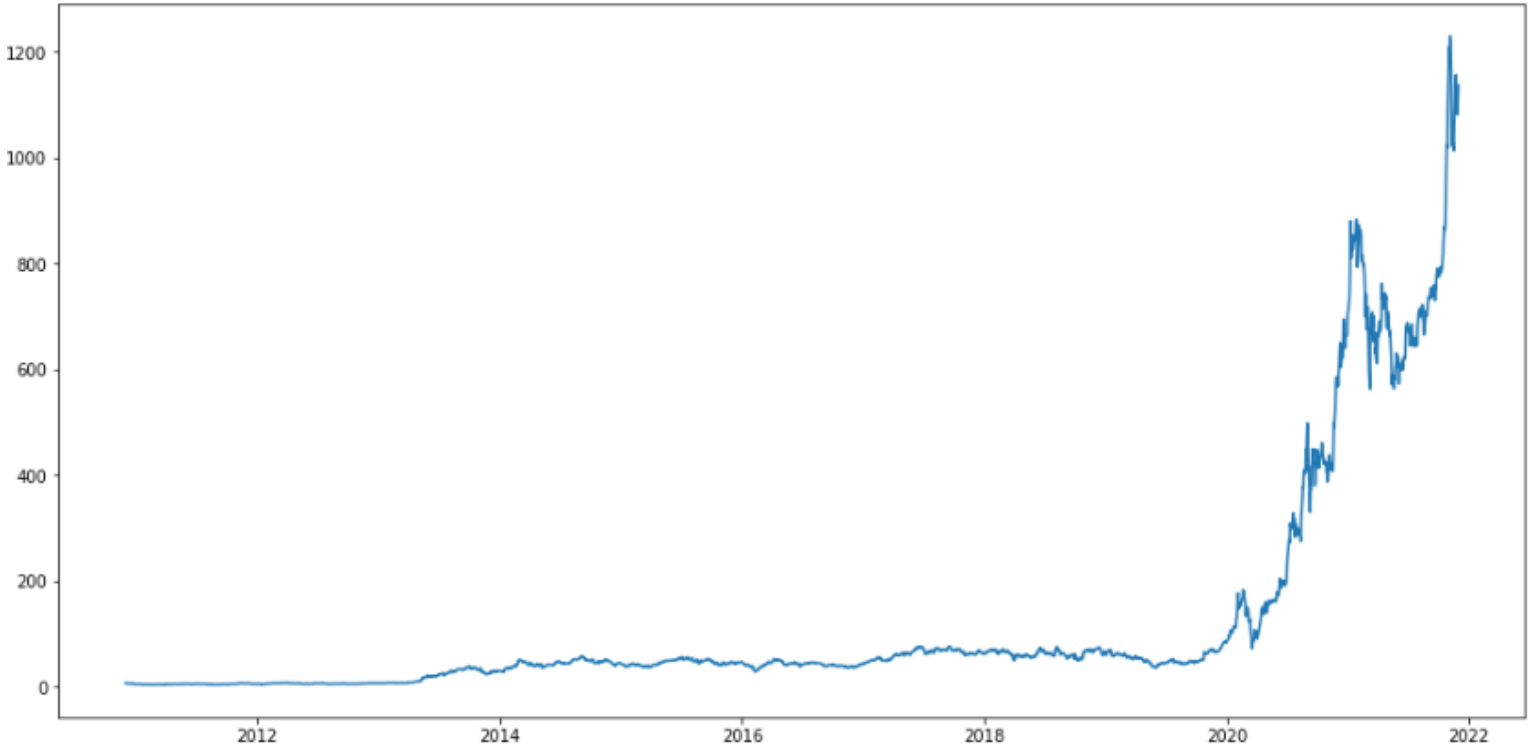
1,128.71 -8.28 (-0.73%)
Pre-Market: 5:47AM EST

Date	Open	High	Low	Close	Adj Close	Volume
2010-11-30	6.748	7.066	6.682	7.066	7.066	11113000
2010-12-01	7.174	7.284	6.69	6.87	6.87	6496000
2010-12-02	6.802	6.86	6.24	6.47	6.47	10035000
2010-12-03	6.402	6.45	6.174	6.298	6.298	5800500
2010-12-06	6.27	6.29	5.912	6.062	6.062	6372000
2010-12-07	6.098	6.48	6.01	6.312	6.312	6556500
2010-12-08	6.496	6.498	6.304	6.474	6.474	3300000
2010-12-09	6.502	6.544	6.33	6.41	6.41	2030000
2010-12-10	6.41	6.584	6.226	6.304	6.304	2147000
2010-12-13	6.328	6.354	6.08	6.11	6.11	2052000
2010-12-14	6.058	6.078	5.552	5.706	5.706	8828500
2010-12-15	5.734	5.994	5.706	5.92	5.92	3714500
2010-12-16	6	6.182	5.93	6.162	6.162	3950500

주식 종가의 데이터 프레임 분석

```
df["Date"]=pd.to_datetime(df.Date,format="%Y-%m-%d")
df.index=df['Date']

plt.figure(figsize=(16,8))
plt.plot(df["Close"],label='Close Price history')
```



Tensorflow?

주식 종가 예측 - 1

```
data=df.sort_index(ascending=True,axis=0)
new_dataset=pd.DataFrame(index=range(0,len(df)),columns=['Date','Close'])
for i in range(0,len(data)):
  new_dataset["Date"][i]=data['Date'][i]
  new_dataset["Close"][i]=data["Close"][i]
```

```
xdata=data[["Open","High","Low","Volume"]]
ydata=pd.DataFrame(data["Close"])
```

주식 종가 예측 - 2

```
from sklearn.preprocessing import StandardScaler

xdata_ss=StandardScaler().fit_transform(xdata)
ydata_ss=StandardScaler().fit_transform(ydata)

print(xdata_ss.shape , ydata_ss.shape)
```

```
(2769, 4) (2769, 1)
```

주식 종가 예측 - 3

```
xtrain=xdata_ss[2300:,:]
xtest=xdata_ss[:2300,:]
ytrain=ydata_ss[2300:,:]
ytest=ydata_ss[:2300,:]

print(xtrain.shape , ytrain.shape , xtest.shape, ytest.shape)
```

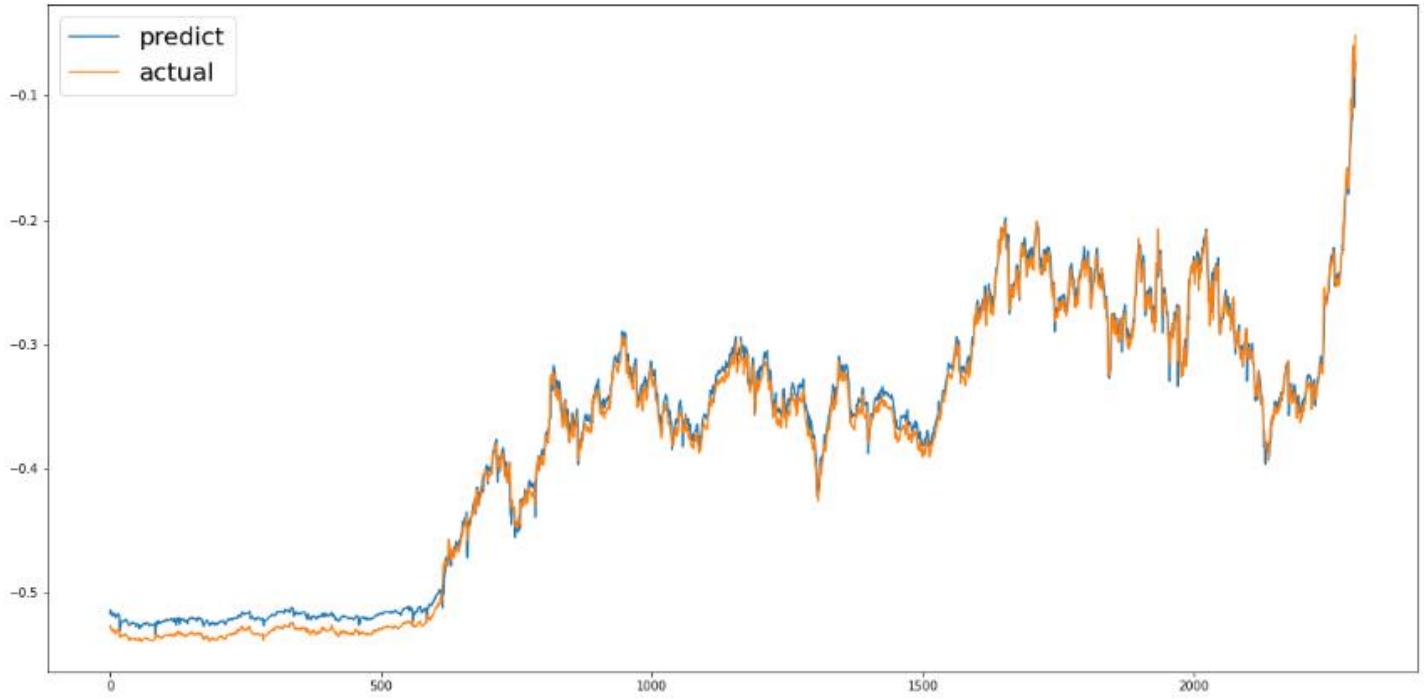
```
(469, 4) (469, 1) (2300, 4) (2300, 1)
```

예측값 시각화

```
tf_predicted = np.dot(xdata_ss, wv )+ bv

plt.figure()
plt.plot(tf_predicted[:2300], label="predict")
plt.plot(ytest,label="actual")

plt.legend(prop={'size': 20})
```



감사합니다.