

Comcast stock price analysis using Bollinger Bands

```
In [2]: import pandas as pd
import fix_yahoo_finance as fyf
from matplotlib import pyplot as plt
from pandas_datareader import data as pdr
fyf.pdr_override()
%matplotlib inline
```

```
In [3]: # reads in Comcast stock to df
df = pdr.get_data_yahoo('CMCSA', start='2017-01-01')
```

[*****100%*****] 1 of 1 downloaded

```
In [4]: df.tail()
```

Out[4]:

	Open	High	Low	Close	Adj Close	Volume
Date						
2018-12-28	34.860001	35.360001	34.180000	34.349998	34.160000	16231300
2018-12-31	34.290001	34.599998	33.299999	34.049999	34.049999	21613200
2019-01-02	33.490002	34.450001	33.419998	34.369999	34.369999	16970400
2019-01-03	34.330002	35.330002	34.130001	34.639999	34.639999	28750400
2019-01-04	35.029999	35.840000	34.860001	35.810001	35.810001	22843800

```
In [5]: # Add columns "20 day moving average", "20 day standard deviation", "STD upper
band", "STD low band"
df['20 ma'] = df['Adj Close'].rolling(20).mean()
df['20 sd'] = df['Adj Close'].rolling(20).std()
df['upper'] = df['20 ma'] + (df['20 sd'] * 2)
df['lower'] = df['20 ma'] - (df['20 sd'] * 2)
```

In [6]: `df.head()`

Out[6]:

	Open	High	Low	Close	Adj Close	Volume	20 ma	20 sd	upp
Date									
2017-01-03	34.834999	34.945000	34.115002	34.525002	33.212471	23670400	NaN	NaN	NaN
2017-01-04	34.755001	35.130001	34.590000	34.935001	33.606884	22010800	NaN	NaN	NaN
2017-01-05	34.794998	35.130001	34.700001	35.075001	33.741566	16986000	NaN	NaN	NaN
2017-01-06	35.105000	35.270000	34.910000	35.134998	33.799274	13528000	NaN	NaN	NaN
2017-01-09	35.070000	35.480000	35.025002	35.415001	34.068638	18135400	NaN	NaN	NaN

```
In [7]: fig = plt.figure(figsize=(16,6))
axis = fig.add_axes([0.1,0.1,0.8,0.8])
axis.plot(df['Adj Close'],c='b',lw=3)
axis.plot(df['20 ma'],c='gray')
axis.plot(df['upper'],c='g',ls='--')
axis.plot(df['lower'],c='g',ls='--')
plt.title('Comcast Bollinger Band. Jan 2017 - Dec 2018')
plt.legend();
```

