lab01_ex1

June 12, 2021

[14]:
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# Aleksandra Spiecha
# Exercise 1
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[15]:
```
import pandas as pd
import datetime as dt
import matplotlib.pyplot as plt
import scipy
```

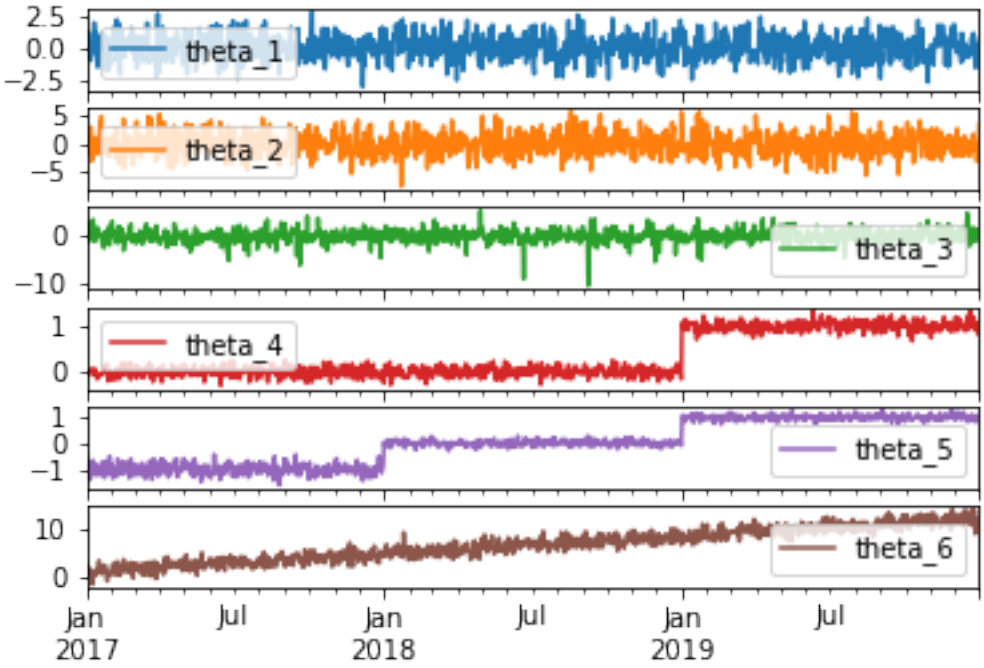
[16]:
```
# Import Data1.csv file and and set first column as an index
data_ex = pd.read_csv('Data1.csv', index_col=0, parse_dates=True)

data_ex.index = pd.to_datetime(data_ex.index)
data_ex.head() # to display the first 5 lines of loaded data
```

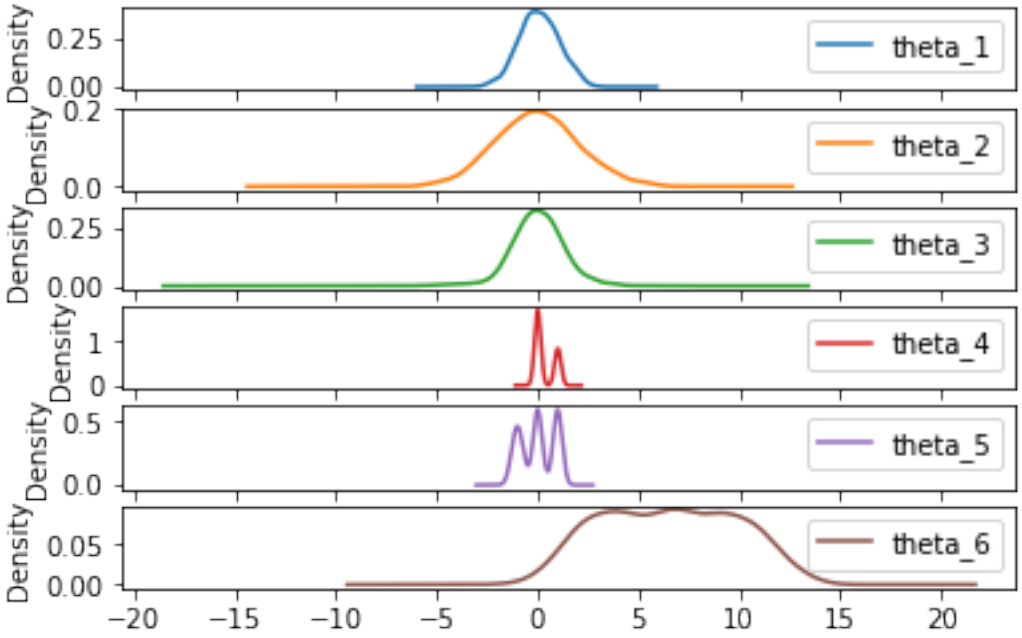
[16]:

	theta_1	theta_2	theta_3	theta_4	theta_5	theta_6
2017-01-01	0.756936	-1.467790	0.096136	-0.115306	-0.447908	0.902579
2017-01-02	0.767089	0.185797	-1.428536	-0.086443	-0.954288	1.930909
2017-01-03	0.404544	1.415887	0.443466	0.000200	-0.892351	2.449691
2017-01-04	1.313957	-1.804471	-0.836986	0.011785	-1.012518	1.182085
2017-01-05	0.209862	1.315868	0.140993	-0.046473	-1.417092	1.742433

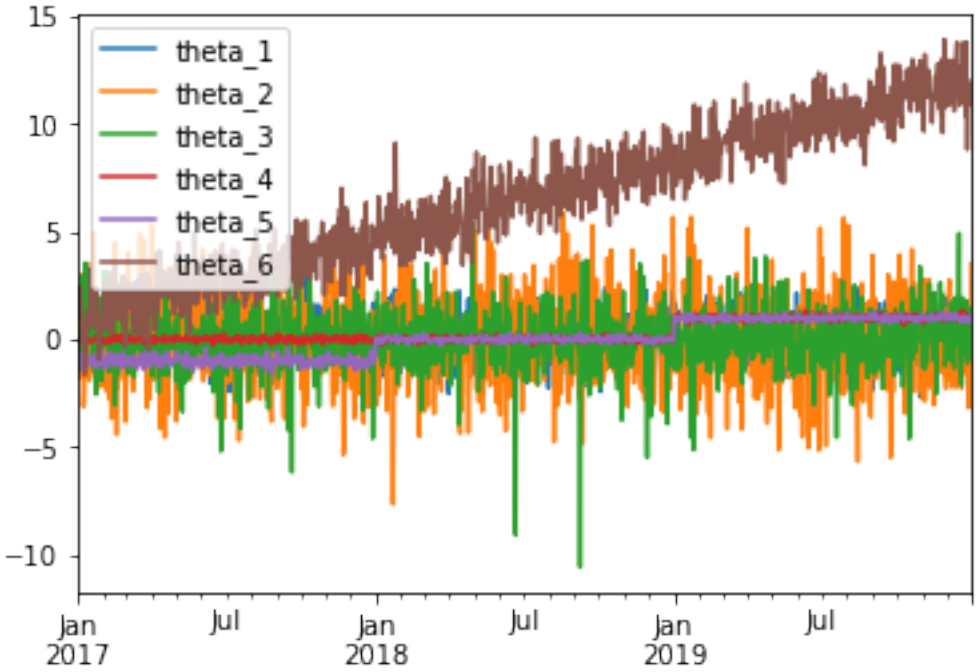
[12]:
```
# Plot all columns as time series
data_ex.plot(subplots=True)
plt.show()
```



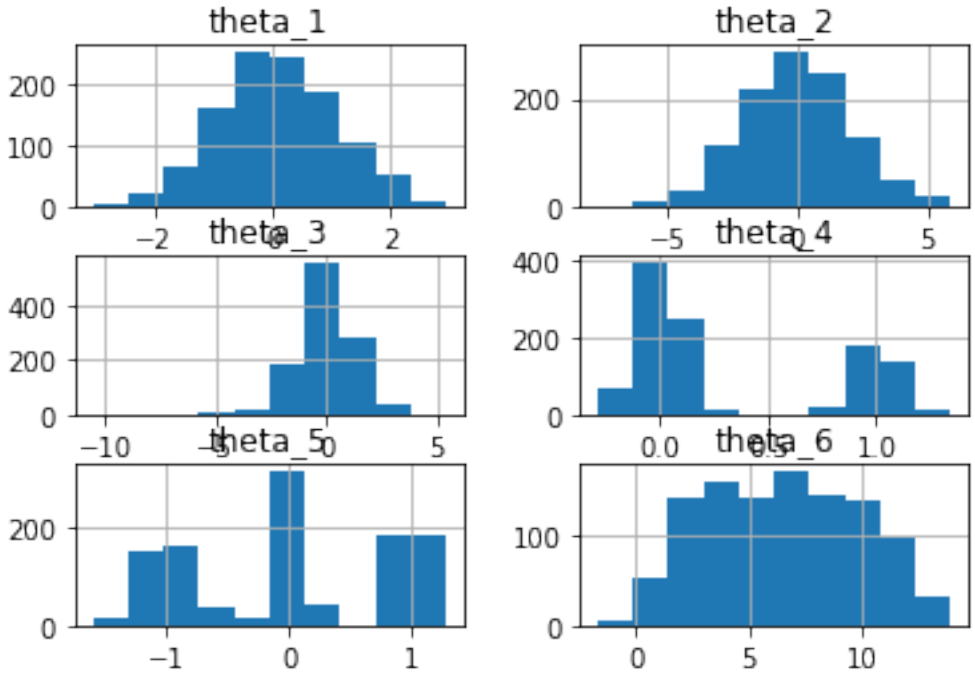
[22]:
```
# Plot KDE for all columns
data_ex.plot.density(subplots=True)
plt.show()
```



[23]:
```
# Plot all columns
data_ex.plot()
plt.show()
```



[24]:
```
# Plot histograms
data_ex.hist()
plt.show()
```

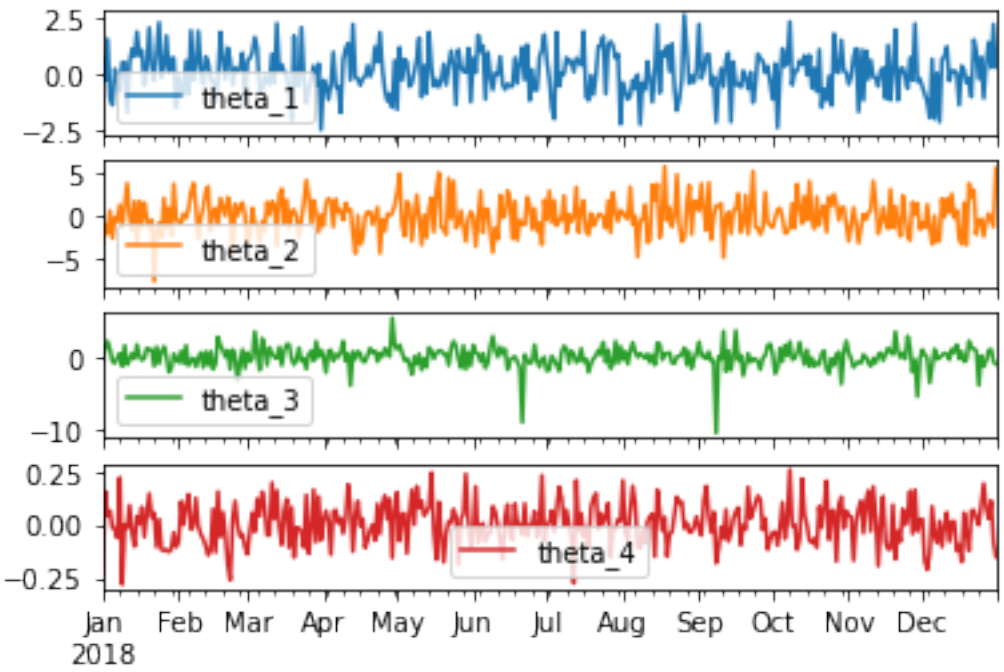


[26]:
```
# Data from 2018
data_2018 = data_ex.loc['2018', 'theta_1':'theta_4']
data_2018.head()
```

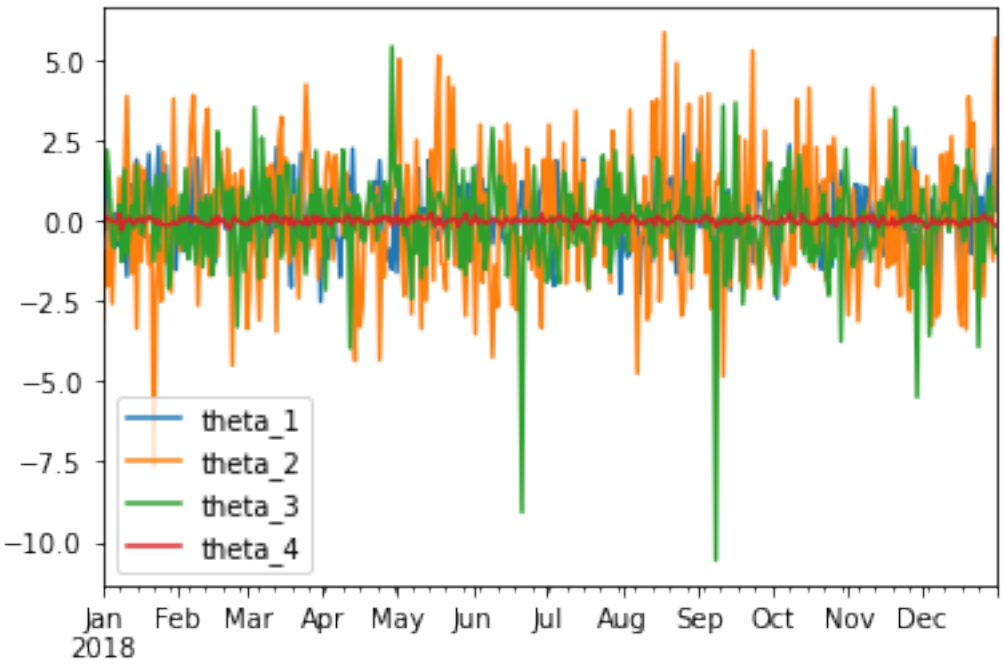
[26]:

	theta_1	theta_2	theta_3	theta_4
2018-01-01	0.682693	-3.091767	-0.475717	-0.238530
2018-01-02	-0.283107	-0.979955	1.233933	0.158031
2018-01-03	1.572221	-2.033528	2.196317	0.041347
2018-01-04	-1.042981	0.651530	1.060125	0.064832
2018-01-05	-1.392614	-2.570905	-0.600063	-0.015025

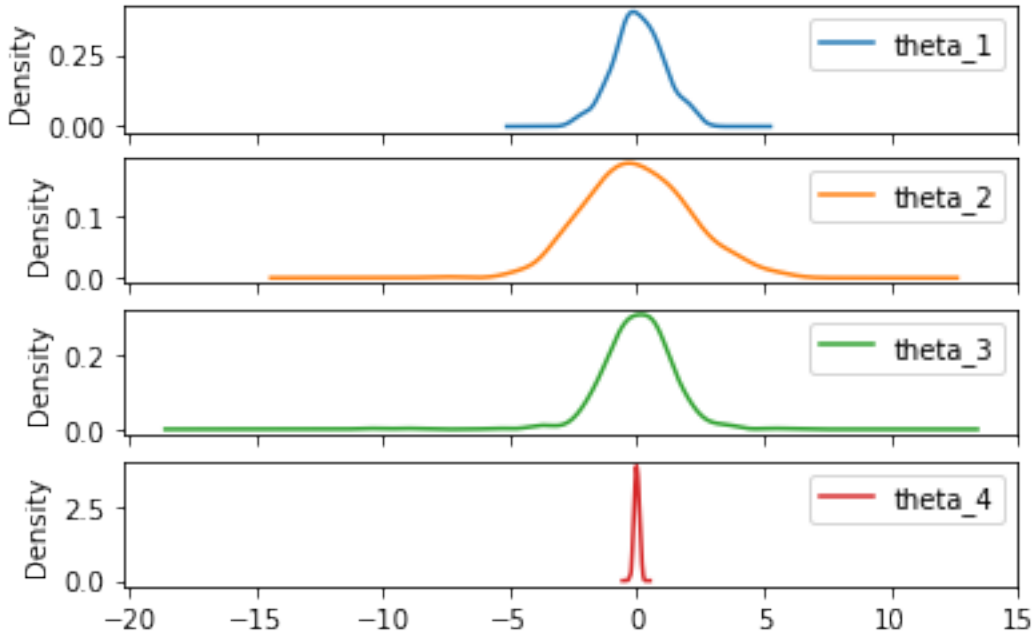
[27]:
```
data_2018.plot(subplots=True)
plt.show()
```



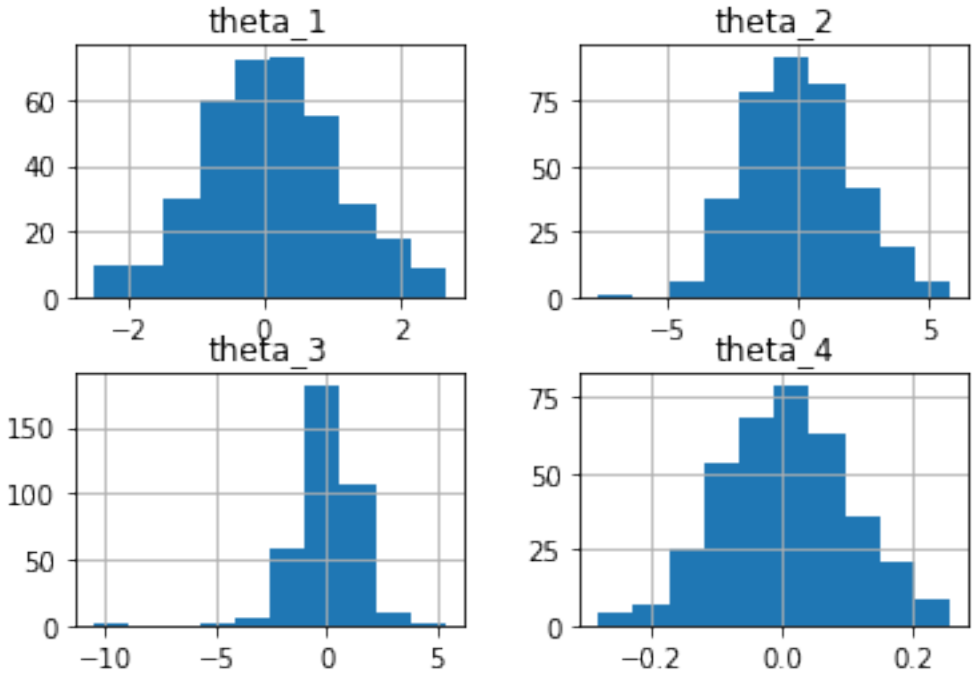
[30]:
```
data_2018.plot()
plt.show()
```



[31]:
```
data_2018.plot.density(subplots=True)
plt.show()
```



[32]:
```
data_2018.hist()
plt.show()
```



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