

Meeting 3

09/23/2021

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Deliverables

- Read data using EEG_read function + python script
- Do something with the data:
 - visualizations with matplotlib
 - calculate some statistics
- Familiarize with JSON for Tobii Pro data

Methodology and Learnings

How did I do it?

- Python script to run read_eeg and store output in csv
- Jupyter for visualization
- Implement matplotlib functions
- Videos on Tobii Pro and JSON

What did I learn on the way?

- Working on jupyter
- Matplotlib functions
- Intro. to Tobii Pro data and JSON

Results

```
Box:~/Documents/SeniorDesign/EEG_DATA$ python3 run_read_eeg.py
Box:~/Documents/SeniorDesign/EEG_DATA$
```

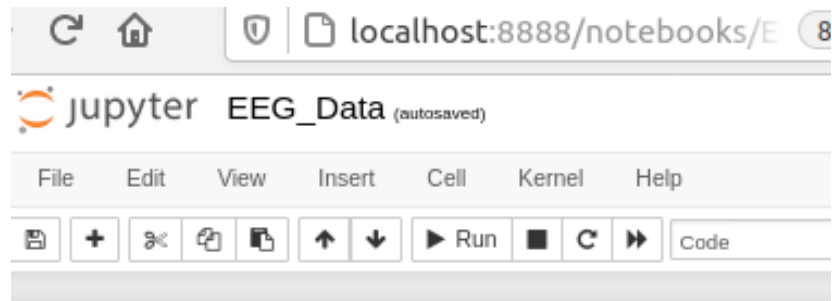
```
#import file
from read_eeg import read_eeg
import csv

#run function to read the eeg
output = read_eeg("data/2020_06_04_T05_U00T_EEG01.vhdr")

#write dataset to a csv file
output.to_csv('log.csv')
```

```
uche@Boo-VirtualBox:~/Documents/SeniorDesign/EEG_DATA$ jupyter notebook
[I 07:39:22.182 NotebookApp] Serving notebooks from local directory: /home/uche
/Documents/SeniorDesign/EEG_DATA
[I 07:39:22.182 NotebookApp] Jupyter Notebook 6.4.4 is running at:
[I 07:39:22.183 NotebookApp] http://localhost:8888/?token=e407b982ceb4516a4f4b1
7e5ee2e72d7ad25e18ae5ab4745
```

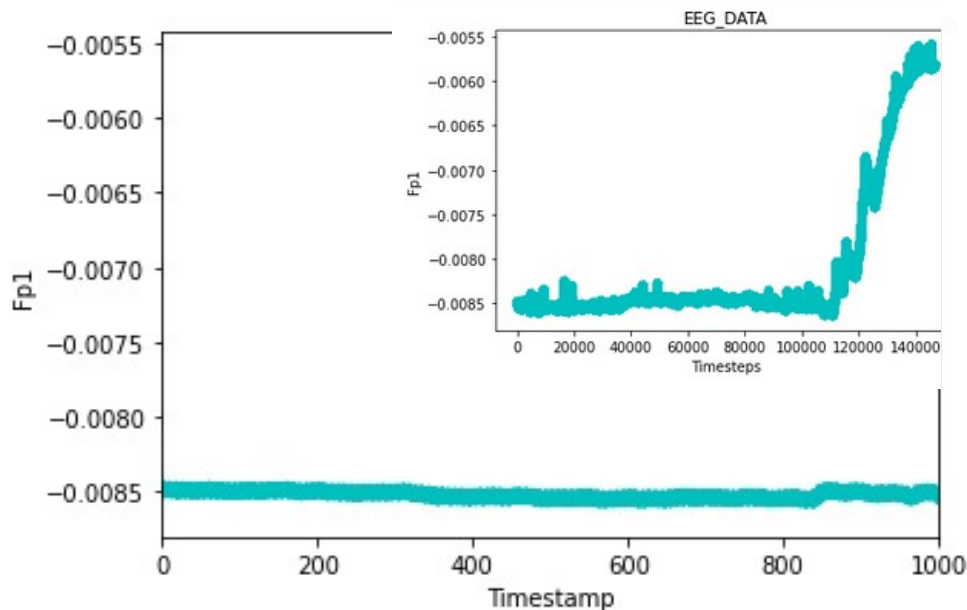
Results



```
In [66]: import pandas as pd
import matplotlib.pyplot as plt

df = pd.read_csv('log.csv')

# convert column to array
Timestamp_column = df.loc[:, 'Unnamed: 0']
Fp1_column = df.loc[:, 'Fp1']
#scatter plot
plt.scatter(Timestamp_column, Fp1_column,
#define title, x,y label and limit
plt.title("EEG_DATA")
plt.xlabel('Timesteps')
plt.ylabel('Fp1')
plt.xlim([0, 1000])
#display
plt.show()
```



Results

```
In [67]: df = pd.read_csv('log.csv')
df.rename(columns = {'Unnamed: 0': 'Timesteps'}, inplace = True)
#Aggregation
df.describe()
```

Out[67]:

	Timesteps	Fp1	Fp2	F3	F4	C
count	146884.000000	146884.000000	146884.000000	146884.000000	146884.000000	146884.000000
mean	73441.500000	-0.008107	-0.004131	-0.002427	-0.004261	0.00907
std	42401.902807	0.000832	0.000471	0.001249	0.000715	0.00089
min	0.000000	-0.008647	-0.004730	-0.006849	-0.006364	0.00813
25%	36720.750000	-0.008531	-0.004389	-0.002054	-0.004313	0.00846
50%	73441.500000	-0.008472	-0.004243	-0.001899	-0.004279	0.00889
75%	110162.250000	-0.008417	-0.004142	-0.001852	-0.004227	0.00903
max	146883.000000	-0.005583	-0.002327	-0.001368	-0.002086	0.01148

8 rows × 83 columns