Learning to Recall Dreams from Dreamers

A sleep-EEG study

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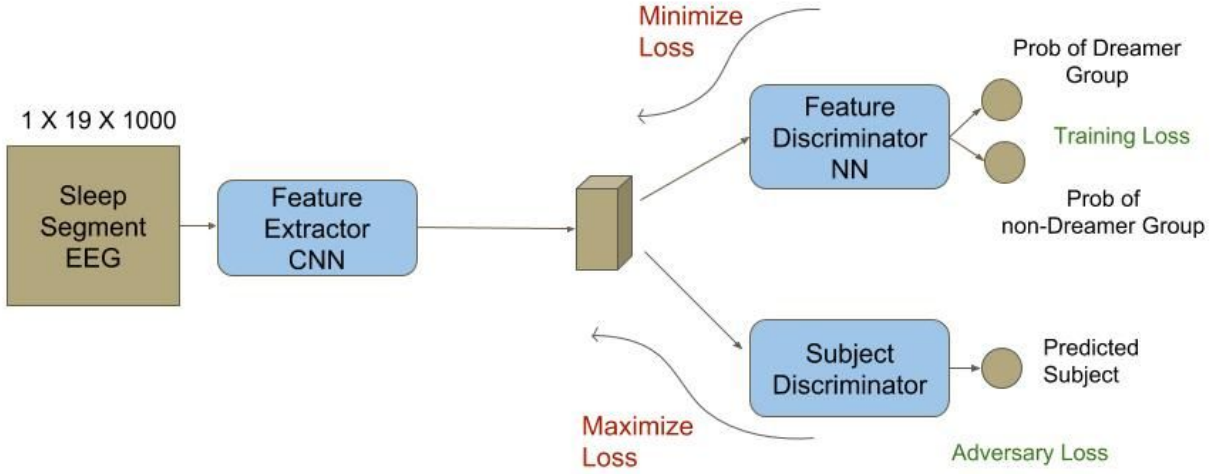
Major Takeaways from Brainhack School

- Knowledge about basic MRI and fMRI concepts and processing pipelines
- Preprocessing & Visualization tools - nilearn, mne
- Keras for quick deep learning implementation
- Graph Convolutional Networks
- Some great discussions on potential project ideas for upcoming BrainHacks

Major Goals

1. Train a deep convolutional architecture to discriminate people with high dream recall rate (dreamers) from those with low dream recall rate (non-dreamers)
2. Observe the decoding (classification) accuracies for different sleep stages to identify key sleep stage containing differences
3. Try to train on identifying individual subjects - use as person identification tool

Network architecture



Project Updates and Results

1. Only SWS stage data used
2. Subject prediction with less data → need to check with baseline methods using ML techniques
3. More linear layers were required to learn subject-specific features → subject adversary to have more linear layers that group classifier