**Project Proposal**

Problem description :

* The target variable will be different sleep stages labels : stage1, 2, 3 and REM sleep
* This is a classification problem
* Sleep is ubiquitous in human life. One of the major challenges in sleep research is the labeling of sleep recording data. If we could use machine learning techniques for classifying sleep stages, it would be beneficial for sleep data and to reveal the underlying structures for each sleep stage.

Dataset:

* Sleep datasets collected from my experiment. 10 participants each participant with three 90 minute nap which could be separated into 30s epochs. For each sleep stage, there will be about 1800 data points.
* This is time-series data set. The target variable is categorical
* This is a private dataset

Preprocess the dataset:

* The time-series data will be processed with MNE-python. I’m still working on the preprocessing of time-series data