

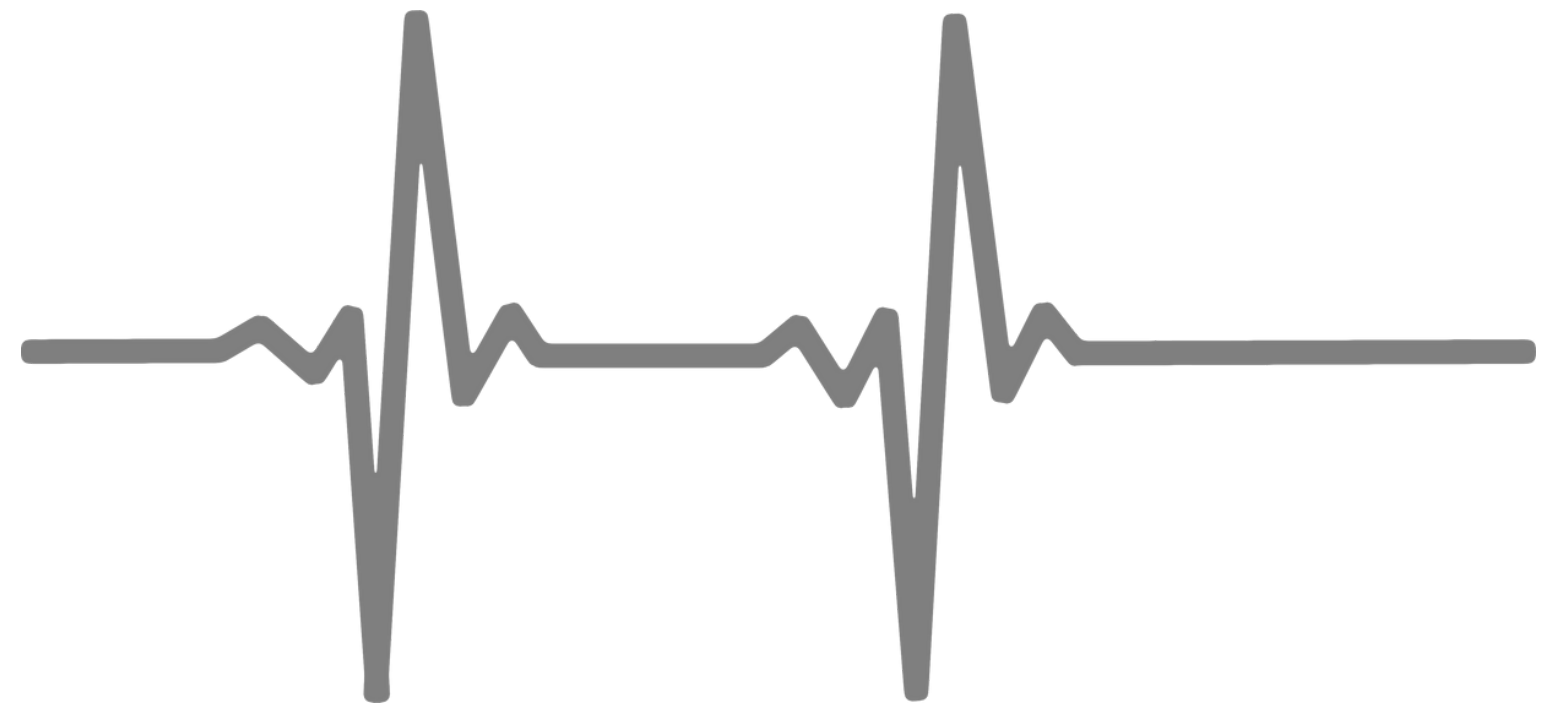
BIOSIGNALS

Pavel Šnejdar



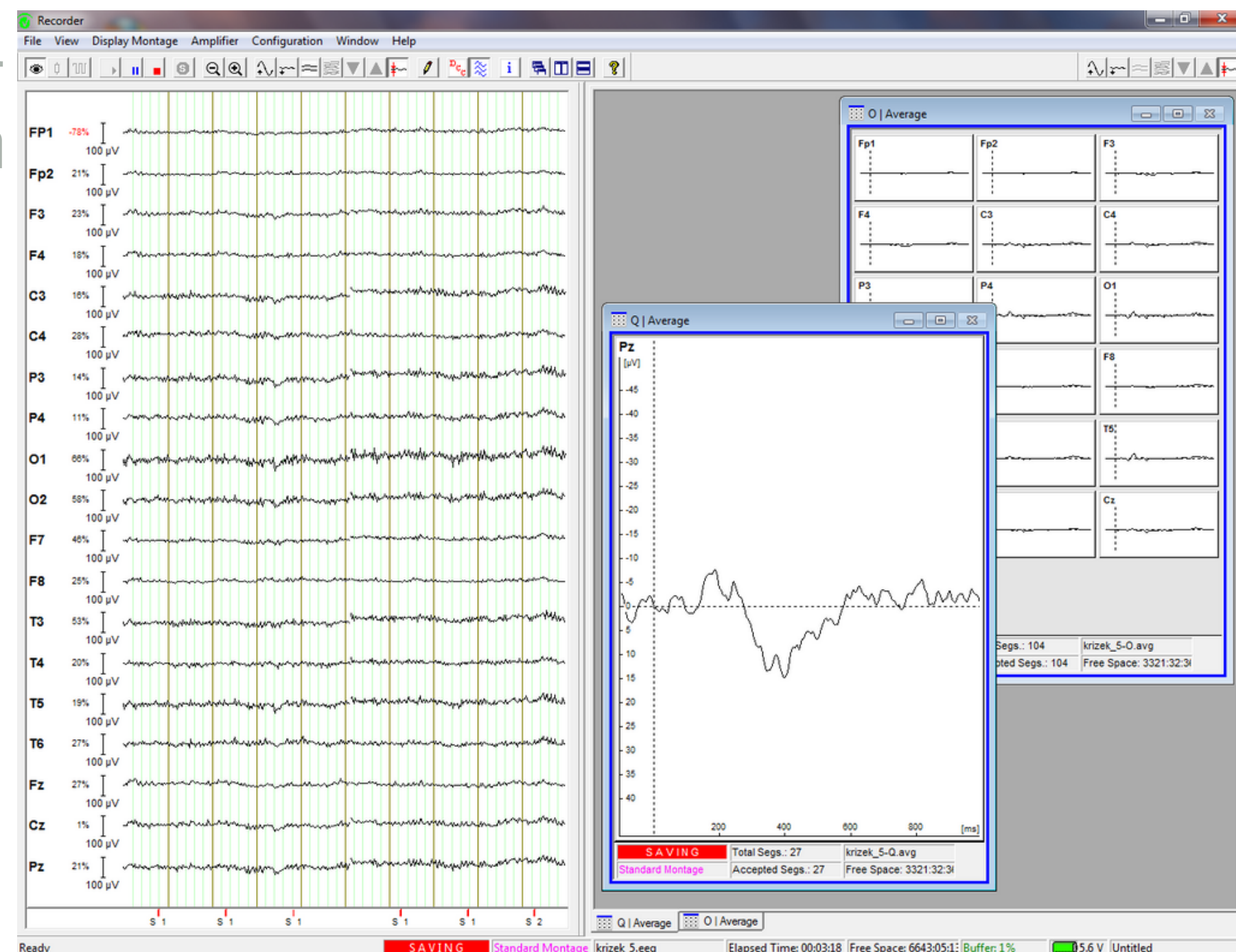
BIOSIGNALS

- ECG, EMG (non-invasive), EEG
- We focus on EEG
 - + Experience
 - + Datasets
 - Ugly data



DATA CHARACTERISTICS

- Continuous EEG X ERP data
- Number of channels - from 1 to 256 (typically 19) channels
- Channel correlation

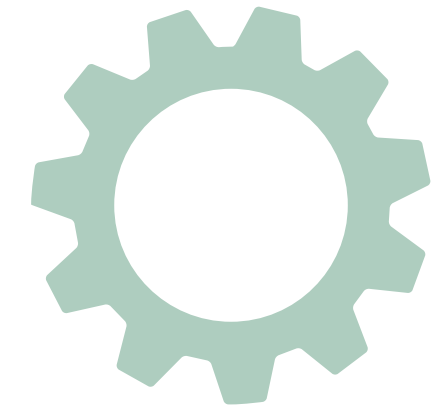


DATA PROBLEMS

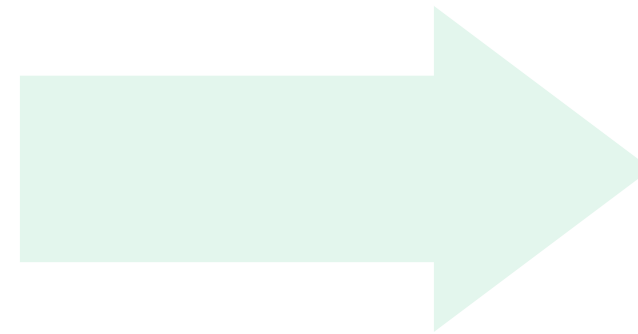
- Noise
- Artefacts (muscle activity, eye blinking, ECG,...)
- Each person has unique data
- Device - EEG amplifier
- The room - appliances



EEG DATA PROCESSING METHODS



- Evoked potentials
- SSVEP
- Motor imaginary task
- Concentration/relaxation



- Filtering
- Channel average
- Grand average
- FFT

EEG DATA FORMATS

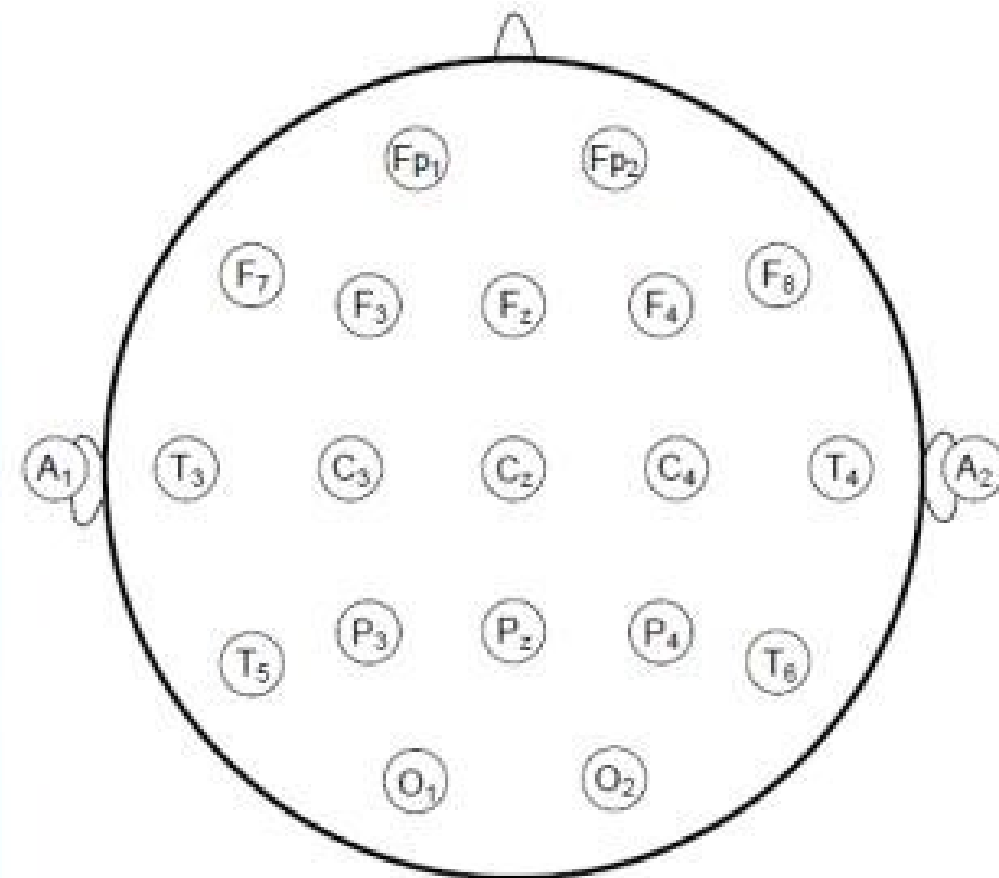
- BrainVision (.vhdr, .vmrk, .eeg)
- European Data Format (.edf)
- CSV

- Metadata
- Markers
- Data

https://mne.tools/stable/auto_tutorials/io/20_reading_eeg_data.html

OUR LAB

We measure 19 channels EEG



THANK YOU