

# Deep Learning Mini-project 1 report

## Prediction of finger movements from EEG recordings

Caterina Bigoni<sup>a</sup>, Luca Pegolotti<sup>b</sup> and Nicolò Ripamonti<sup>a</sup>

18 May 2018

### 1 Introduction

Visualisation of data: one sample (for all 28 channels or only few) for target = 0 and one sample for target 1 + Same for mean and std (Luca)

- Linear Perceptron – Error train vs. test when overfitting
- Cross Validation (how many?)
- Each model is averaged over N times

### 2 Models we tried and why they don't work

- 2 Conv 1D + 3 linear
  - Conv only in the direction of the channels [?]
  - Conv with "images", i.e. Conv 2D asymmetric (only in one direction) [?]
  - All of them with Data Augmentation + white random noise [?]
  - adaptive eta in gradient descent
  - L1 and L2 Regularization [?]
  - dropout

### 3 Model that works best

it doesnt overfit + graph  
Hyperparameters

### 4 References