

# 395 Machine Learning

## — Assignment 2 —

Group 11

Malon AZRIA, Alexandre CODACCIONI, Benjamin MAI, Laura HAGEGE.

ma12917@ic.ac.uk, afc17@ic.ac.uk, bm2617@ic.ac.uk, lmh1417@ic.ac.uk

CBC helper: Pingchaun MA

Course: CO395, Imperial College London

26<sup>th</sup> February, 2018

### **1 Introduction**

The aim of this coursework is to implement a Fully-Connected Neural Network from scratch and train it in order to identify the best parameters according to emotion recognition.

To do so we implemented first all the necessary keystone functions to create the Network such as:

- Linear and ReLU Layers
- Dropout Layers
- SoftMax Classifiers

### **2 Linear and ReLU Layers implementation (forward/ backward pass)**

### **3 Dropout implementation**

### **4 Softmax classifier**

- 5 Fully-Connected Neural Network Creation
- 6 Hyper-parameter optimisation
- 7 Conclusion