

Exam

Deep Learning Basics

Build and **train** a neural network on the dataset provided using the Tensorflow-Keras framework. You should:

- **Create a test set:**
 - **for a regression task:** use 20% of the data and set the random seed to 42
 - **for a classification task:** use 20% of the data, set the random seed to 42 and use a stratified splitting method.
- **Preprocess the data:** While preprocessing is not the subject of this exam, wrong/poor preprocessing steps will be sanctioned.
- **Explain your choices:** Why did you choose this architecture ? this hyperparameter ?
- **Compare different architectures:** Layer hyperparameters (activation function, initialization method, units), regularization methods (dropout, batch normalization, l1 l2 regularization, early stopping ...), training hyperparameters (learning rate, batch size, optimizers ...) ...
- **Balance speed vs performance:** The speed and the performance of your model will be evaluated.

(Bonus point) Save your model.