## 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.