Lab 5: Experimental Setup and Classification using NN (Week 3.1)

1 – Objectives

In this work you will use Scikit-learn to implement a classification task using NN and gain insights on the configuration of MLP hyperparameters and the process of experimental setup.

We will use the Sales-Win-Loss dataset, which contains the sales campaign data of an automotive parts wholesale supplier.

The classifier will be used to predict which sales campaign will result in a loss and which will result in a win.

2 – Data preprocessing and Experimental Setup

Use the previously acquired knowledge to preprocess the data as you deem necessary, and create your Train, Validation and Test sets. Don't forget that you should only use your Test set after you are satisfied with all NN parametrization and hyperparametrization (see section 3.). Consider if using cross-validation is necessary.

3 – Classification Task

Use Scikit-learn (https://scikit-learn.org/) and the Sales-Win-Loss dataset to implement a NN MLP classifier that predicts which campaigns will be successful (**from sklearn.neural_network import** MLPClassifier)

You will need to configure and optimize your NN in order to obtain good results. Do your best while trying to avoid overfitting.

4 – Evaluation and Validation

Use the knowledge acquired in last week to properly evaluate and validate the performance of your classifier.