*Grid search* may be applied to hyper-parameter optimisation, i. e. to find the best combination of hyper-parameters (for example, the learning rate) for a given model and test dataset. *Grid search* has several models, each with a different combination of hyper-parameters. Each of these combinations of parameters (correspond to a single model), can be said to lie on a point of a "grid". The goal is to train each of these models and evaluate them (for example, using cross-validation). Then we can select the one that performed best. In *Grid search*, we choose a range of values for every hyperparameter and try every combination in order to tune the hyperparameters. *Grid-search* is a way to select the best of a family of models, parametrized by a grid of parameters, but it doesn’t scale to many hyperparameters (this is called *combinatorial explosion*). We can use *random search* instead choosing random values for all hyperparameters and iterating times. Random search is applicable especially in cases when some hyperparameters are less important.