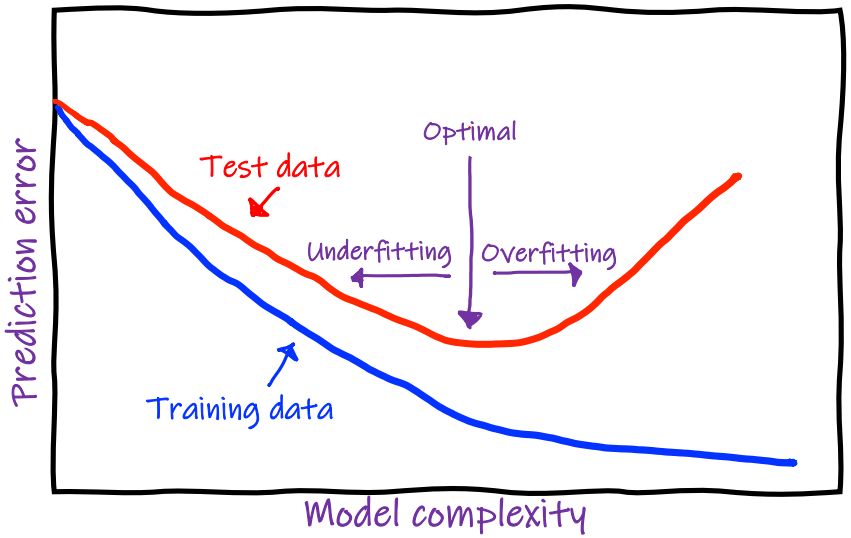
Hyperparameter Tuning & Model Validation

IKN

Hyperparameter Tuning

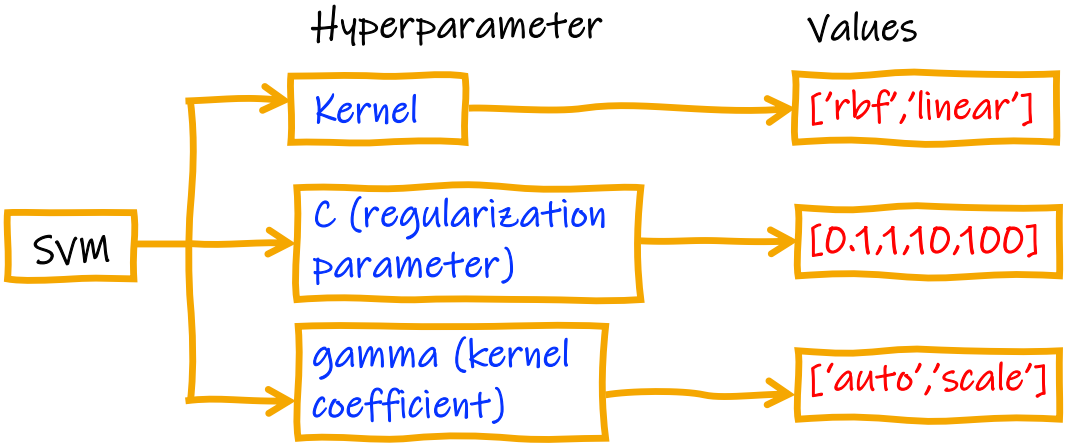
What is hyperparameter tuning?

- A tightrope walk to achieve a balance between underfitting and overfitting



What is hyperparameter

- A configuration that is external to the model and whose value cannot be estimated from data.
- Example: Hyperparameter of SVM

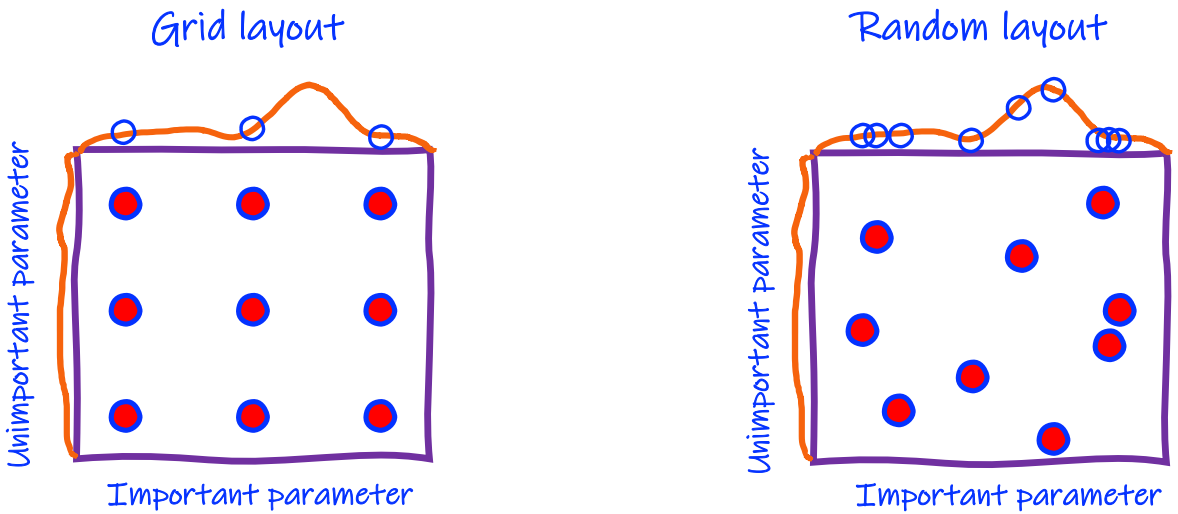


Hyperparameter tuning algorithms

	Random	Adaptive	Evolutionary
Sequential	Grid search/ Random search	Bayesian optimization	Genetic algorithm
Parallel	Asynchronous Successive Halving Algorithm (ASHA)	Bayesian Optimization with Hyperband (BOHB)	Population Based Training

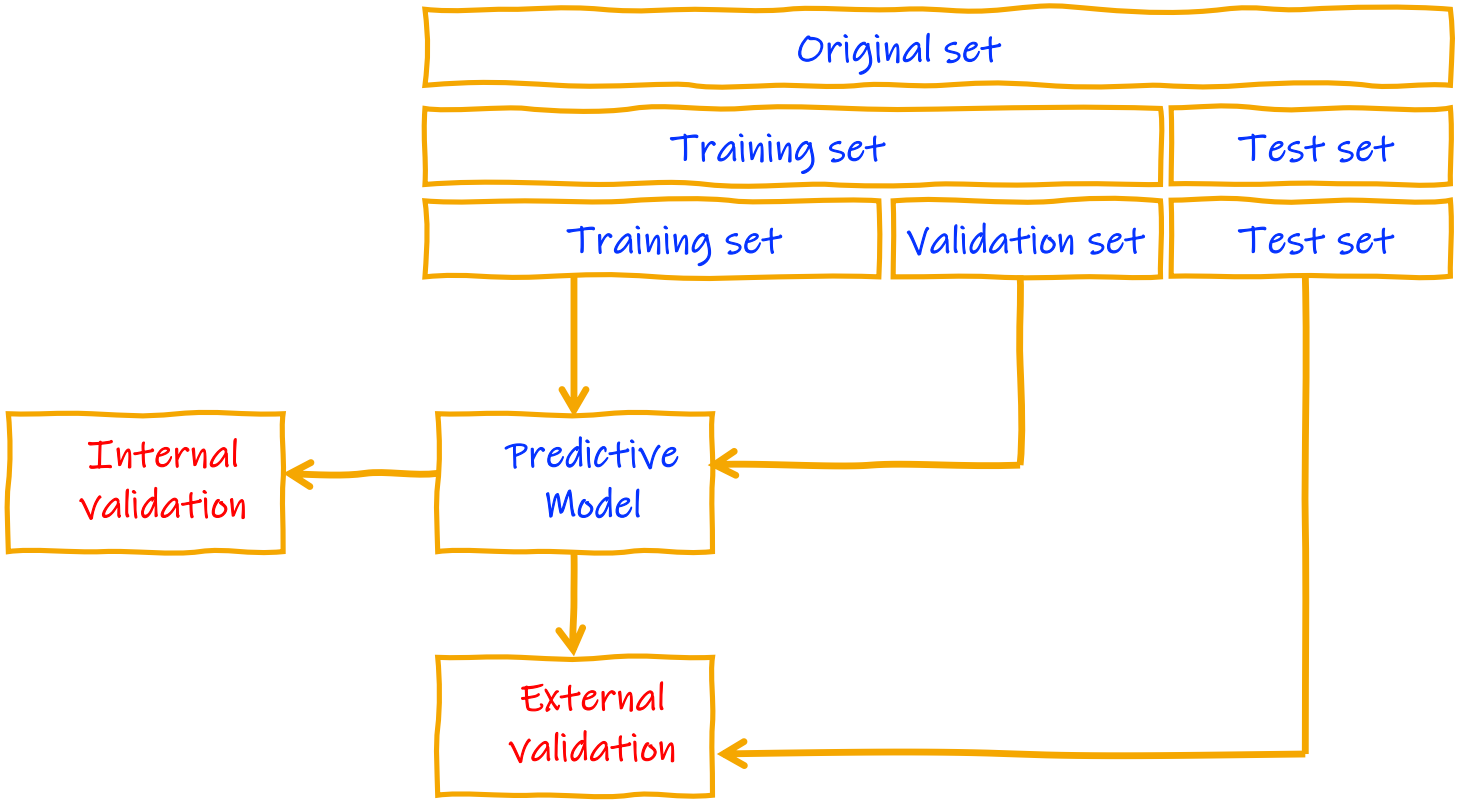
Hyperparameter tuning algorithms

- Grid search vs Random search



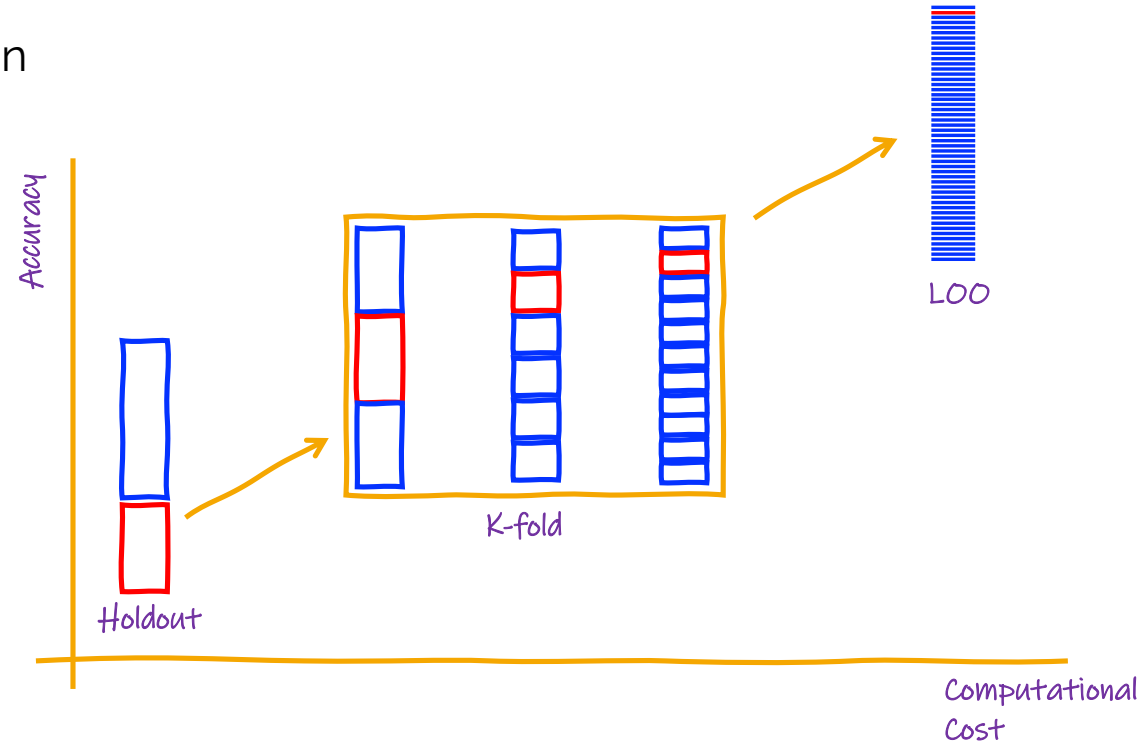
Model Validation

Model validation

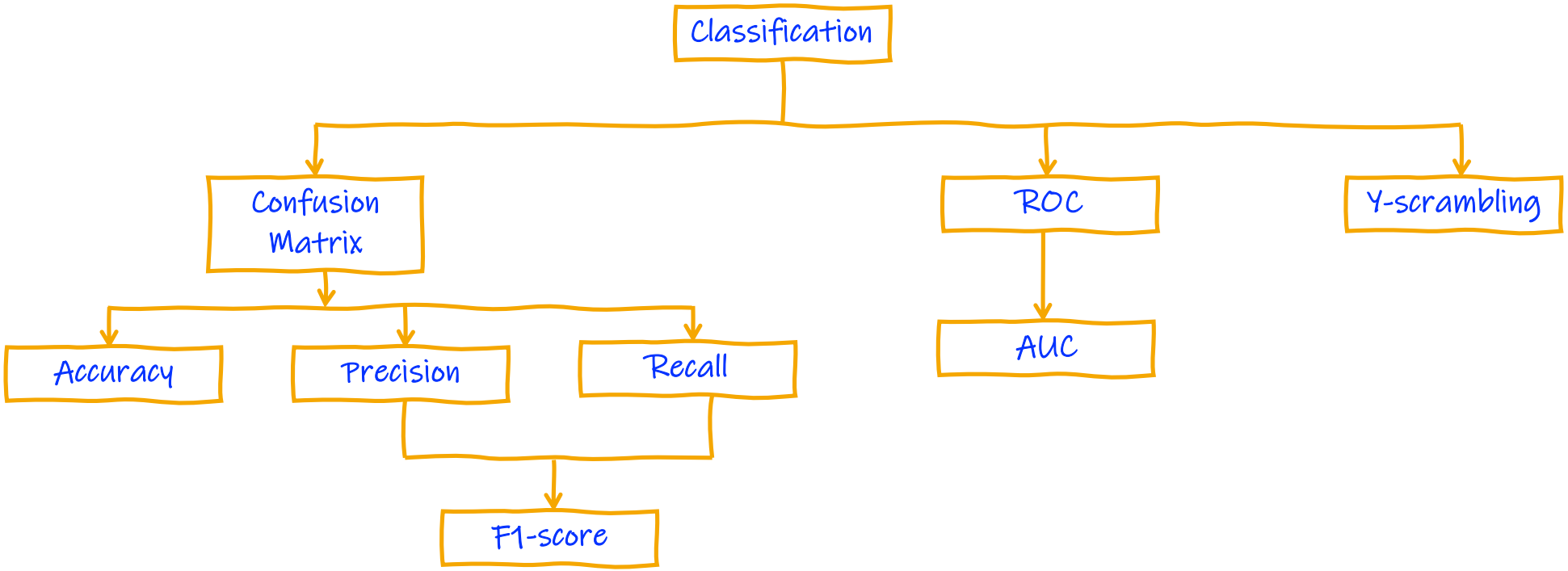


Model validation

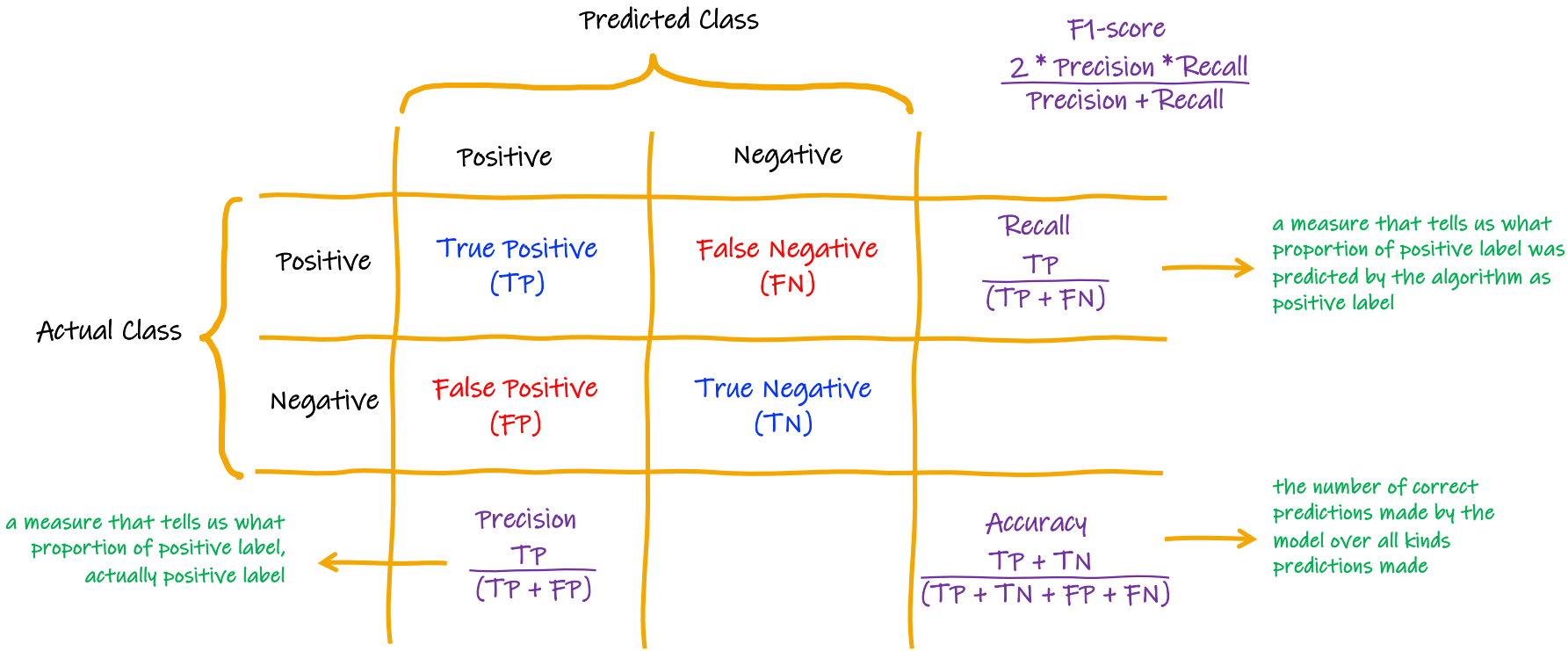
- Cross validation



Classification metrics

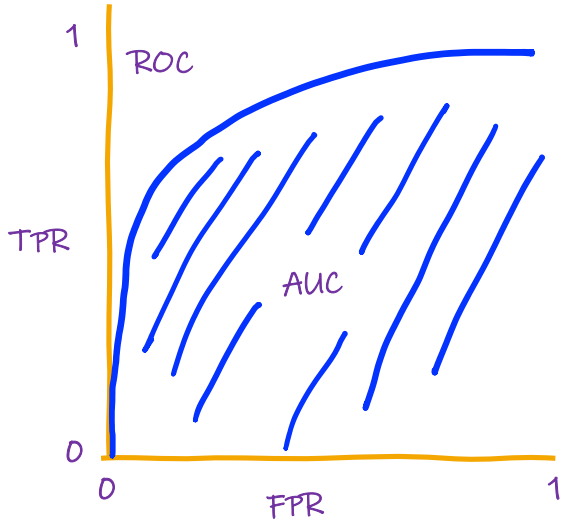


Confusion matrix



Area under curve (AUC)

- AUC tells how much model is capable of distinguishing between classes.



Regression metrics