**AutoML**

AutoML (Automated Machine Learning) refers to the automated end-to-end process of applying machine learning in real and practical scenarios. It involves the automatic selection of data preparation, machine learning model, and model hyperparameters for a predictive modeling task. he essence of AutoML is to automate repetitive tasks such as pipeline creation and hyper-parameter tuning so that data scientists can spend more time on business problems on hand in practical scenarios.

**Popular AutoML Frameworks**

**Auto-SKLearn**

Auto-SKLearn is an automated machine learning software package built on scikit-learn. Auto-SKLearn frees a machine learning user from algorithm selection and hyper-parameter tuning. It includes feature engineering methods such as One-Hot, digital feature standardization, and PCA. The model uses SKLearn estimators to process classification and regression problems.

**MLBox**

MLBox is a powerful Automated Machine Learning python library. It provides highly robust feature selection and leak detection as well as accurate hyper-parameter optimization and state-of-the art predictive models for classification and regression (Deep Learning, Stacking, LightGBM,...)

### TPOT

TPOT is a tree-based pipeline optimization tool that uses genetic algorithms to optimize machine learning pipelines. TPOT is built on top of scikit-learn and uses its own regressor and classifier methods. TPOT explore thousands of possible pipelines and finds the one that best fit the data.

### H2O AutoML

H2O is an open source and distributed in-memory machine learning platform developed by H2O.ai. H2O supports both R and Python. It supports the most widely used statistical and machine learning algorithms including gradient boosted machines, generalized linear models, deep learning and more.

### Auto-Keras

Auto-Keras is an open source software library for automated machine learning (AutoML) developed by DATA Lab. Built on top of the deep learning framework Keras, Auto-Keras provides functions to automatically search for architecture and hyper-parameters of deep learning models.

### TransmogrifAI

TransmogrifAI is an end-to-end AutoML library for structured data written in Scala that runs on top of Apache Spark. TransmogrifAI is especially useful when there are requirements of quickly training quality machine learning models with minimal manual adjustment and constructing modular, reusable, and strongly-typed machine learning workflows.

Example of auto-sklearn for a classification dataset has been mentioned in python notebook file. The ROC curve and precision and recall curve have been shown as below for the same.



