# Automated Machine Learning

## Introduction

**AutoML** is a process of automating certain tasks in a machine learning workflow. You can think of AutoML as a set of tools and technologies that make building machine learning models faster and more accessible to a wider group of users. Though automation can help throughout the ML workflow, the tasks that are often associated with AutoML are the ones included in the model development cycle shown in Figure 1. These repetitive tasks include:

- **Data Engineering**
  - Feature engineering.
  - Feature selection.
- **Training**
  - Identifying an appropriate ML algorithm.
  - Selecting the best hyperparameters.
- **Analysis**
  - Evaluating metrics generated during training based on test and validation datasets.

With AutoML, you can focus on your ML problem and data rather than on feature selection, tuning hyperparameters, and choosing the right algorithm.

## Benefits and Limitations

### Benefits

- To save time
- To improve the quality of the ML model
- To build an ML model without needing specialised skills
- To smoke test a dataset
- To evaluate a dataset
- To enforce best practices

## Limitations

- Model quality may not be as good as manual training
- Model search and complexity can be opaque
- Multiple AutoML runs may show more variance
- Models can't be customised during training

**No Completion Badge Available**