AutoML

Automated Machine Learning provides methods and processes to make Machine Learning available for non-Machine Learning experts, to improve efficiency of Machine Learning and to accelerate research on Machine Learning.

Machine learning (ML) has achieved considerable successes in recent years and an ever-growing number of disciplines rely on it. However, this success crucially relies on human machine learning experts to perform the following tasks:

- Preprocess and clean the data.
- Select and construct appropriate features.
- Select an appropriate model family.
- Optimize model hyperparameters.
- Postprocess machine learning models.
- Critically analyze the results obtained.

As the complexity of these tasks is often beyond non-ML-experts, the rapid growth of machine learning applications has created a demand for off-the-shelf machine learning methods that can be used easily and without expert knowledge. We call the resulting research area that targets progressive automation of machine learning *AutoML*.