**autoai**   **model_training**   **cicd**

AutoAI (no-code)*

*Use of AutoAI remains optional for your MLOps workflow. Depending on your scenario it may increase efficiency and model quality.

With AutoAI, you can train and save machine learning models without coding. The AutoAI tool in CP4D does most of the work for you. AutoAI uses sophisticated training capabilities to build models from your structured data sets. AutoAI automatically runs all major tasks that are part of building and ranking candidate model pipelines:

- **Data pre-processing**: AutoAI analyzes, cleans, and prepares your raw data for machine learning by applying various algorithms, or estimators. Unlike standard machine learning algorithms , it can work with various data formats and is able to handle missing values with data imputation methods you configure.

- **Automated model selection**: AutoAI analyzes the training data, then suggests the model type(binary classification, multiclass classification, or regression) that best matches the data. If you are working with sequenced data/time data, you can also configure the model selection to create a time-series model.

- **Automated feature engineering**: AutoAI explores various feature construction choices while progressively improving model accuracy with reinforcement learning to transform the data into the combination of features that best represents the problem for the most accurate prediction.

- **Hyperparameter optimization**: The AutoAI hyper-parameter optimization uses a novel hyperparameter optimization algorithm to rapidly find and apply optimizations for the model-candidate pipelines.
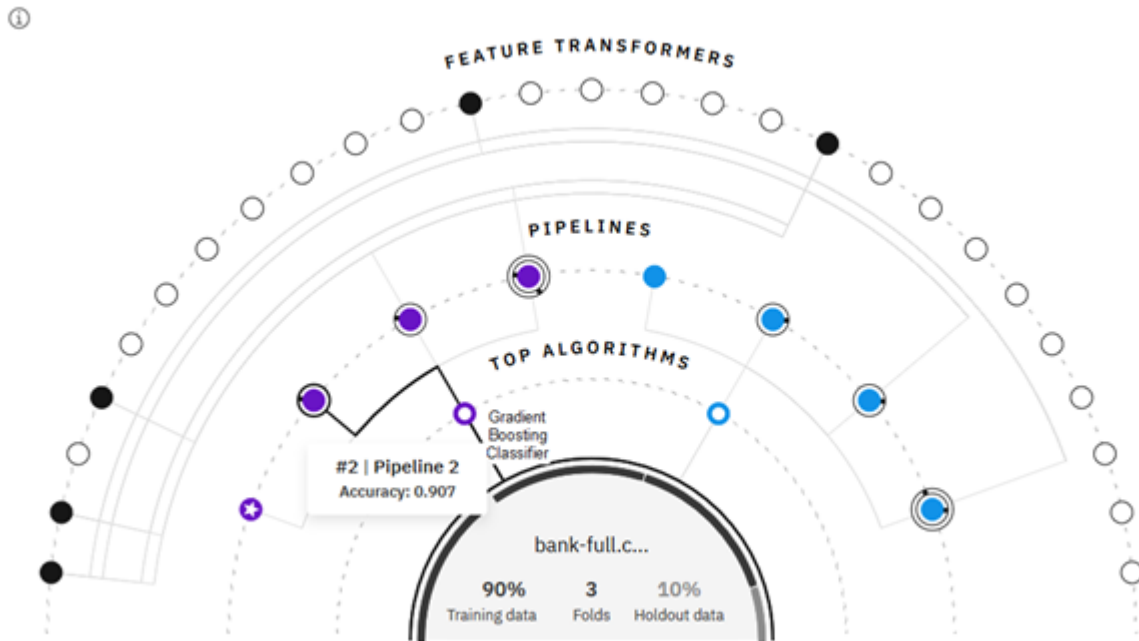
Integrating AutoAI in your MLOps workflow

The way you use AutoAI can vary depending on your use case. For example, you can use AutoAI to fully train models for your scenario. You can also use AutoAI to complement or accelerate your data science, by using it for specific tasks, such as model selection or hyperparameter optimization. As part of your MLOps planning, consider one of these approaches:

- **Full Reliance**: You can implement AutoAI within the Watson Studio Pipeline of your end-to-end MLOps workflow as sole Model Selector, Model Trainer *etc.*

- **Semi Reliance**: Alternatively, you can run AutoAI in parallel to your custom `train_model.ipynb` notebook. In that case, your model training notebook will train your custom-built model while AutoAI trains all pre-developed models. You can then proceed to either deploy your custom-built model, or the model selected by AutoAI, depending on performance metrics you established earlier.

For more information check out the official documentation.

Examples official documentation.

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