Building Machine Learning Pipeline Using Kubeflow Pipeline



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Overview



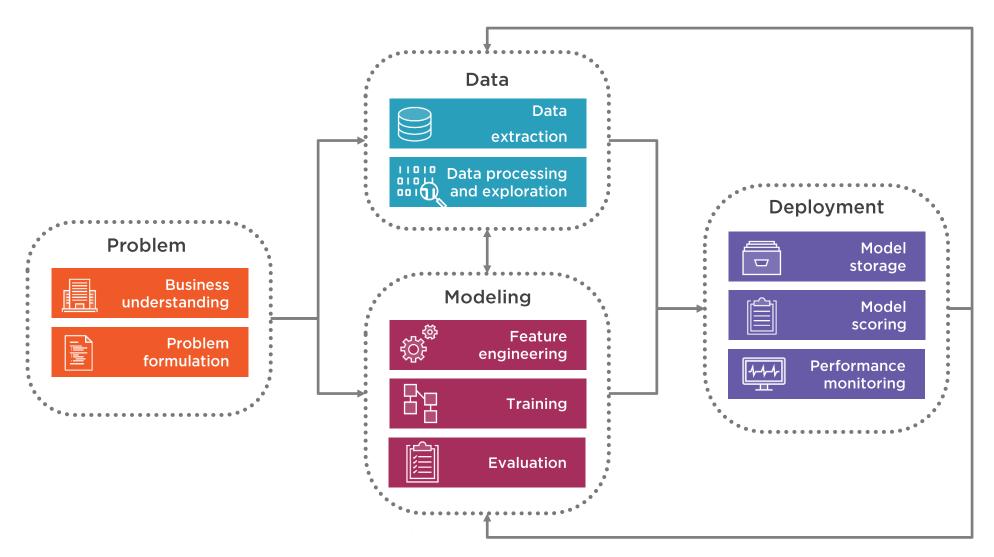
Machine learning pipeline and challenges
Kubeflow pipeline (KFP) overview
KFP concepts

Demo: Building Kubeflow pipeline

- Hyperparameter tuning
- Training
- Serving
- Use notebook to build pipeline



Machine Learning Workflow





Why Build a Pipeline?

Reproducible

Automation

Experiment to production

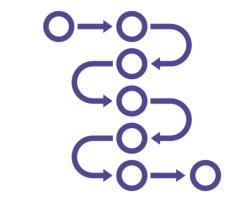
Orchestration

Rapid experimentation

Reusable

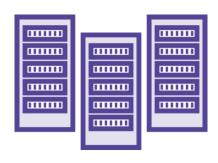


Challenges in Building Pipeline



Complex workflow





Environment and scaling



Kubeflow Pipeline

Build and deploy portable, scalable workflows

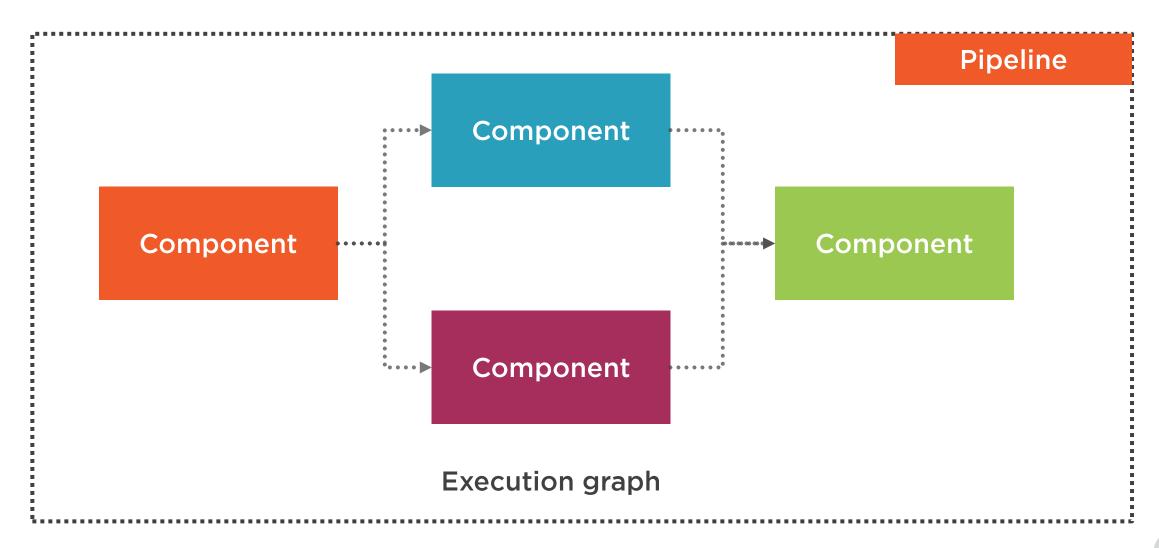
Rapid experimentation

- UI to manage and track experiments

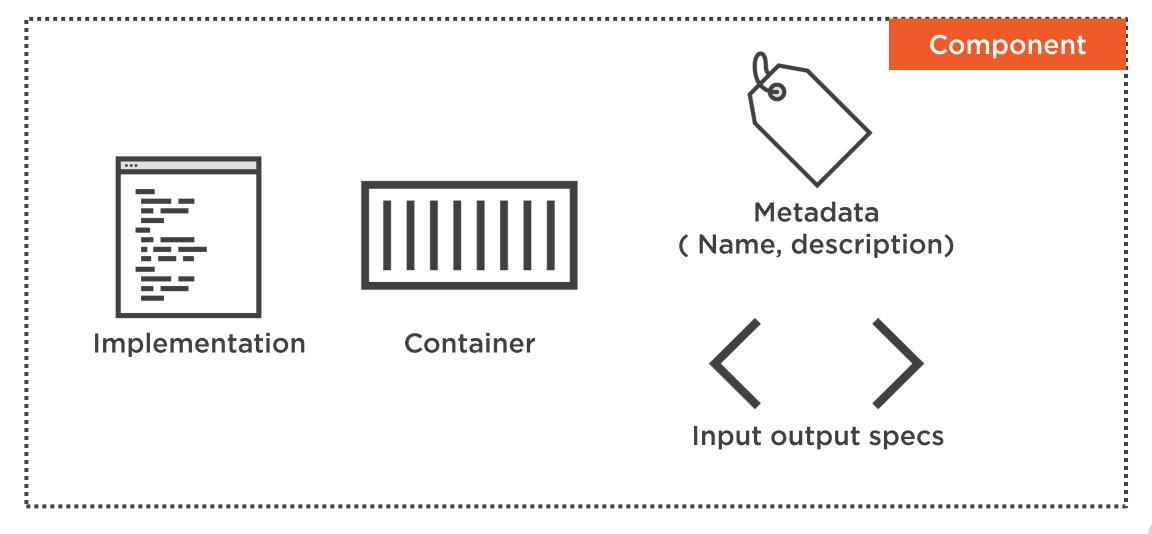
End-to-end orchestration

- Define and orchestrate pipeline and components using SDK
- Multi-step workflow engine
- Notebook for SDK interaction

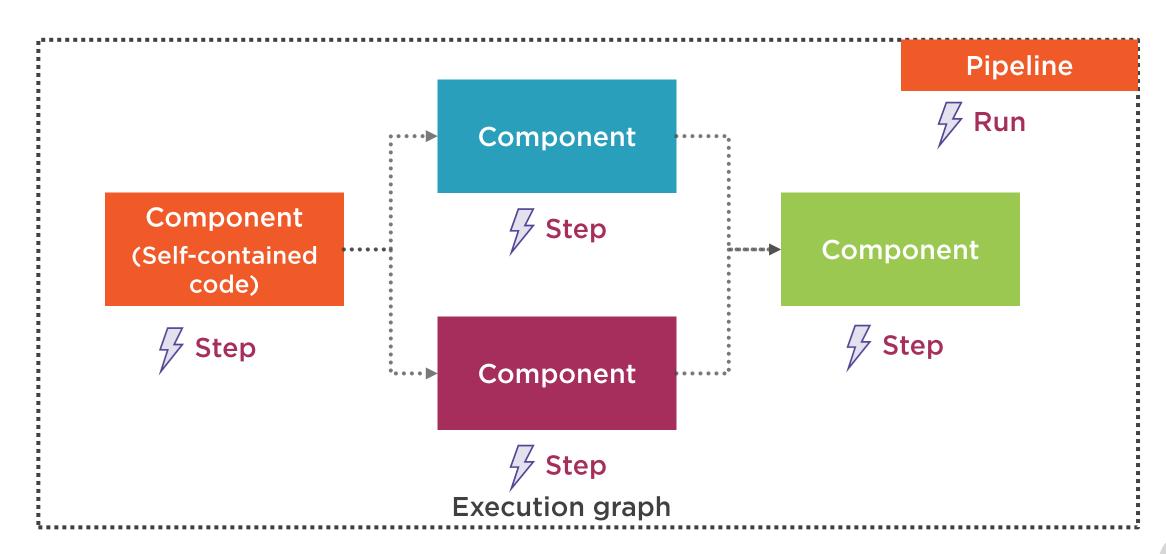




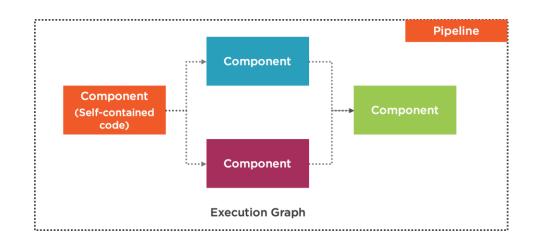


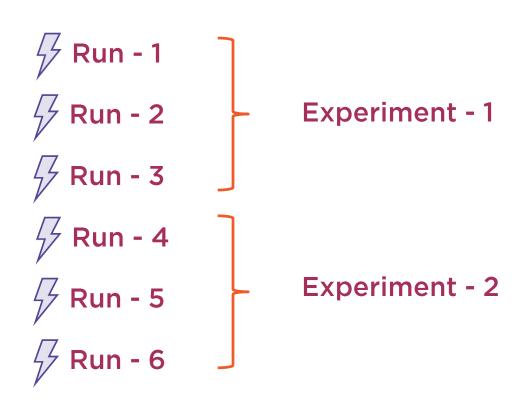




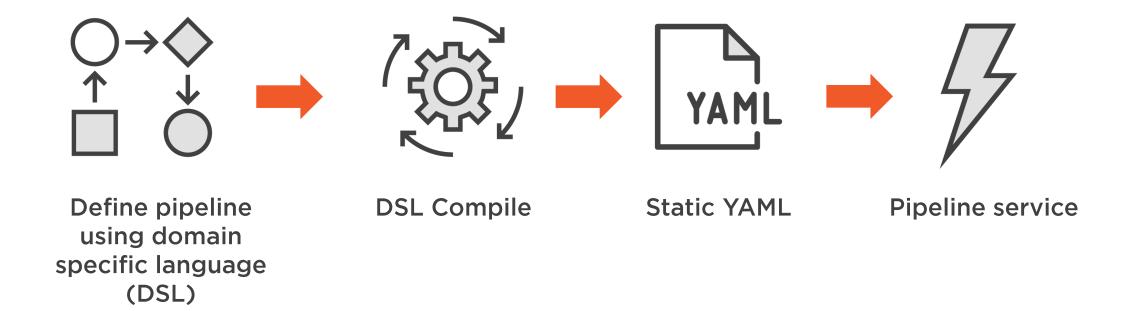






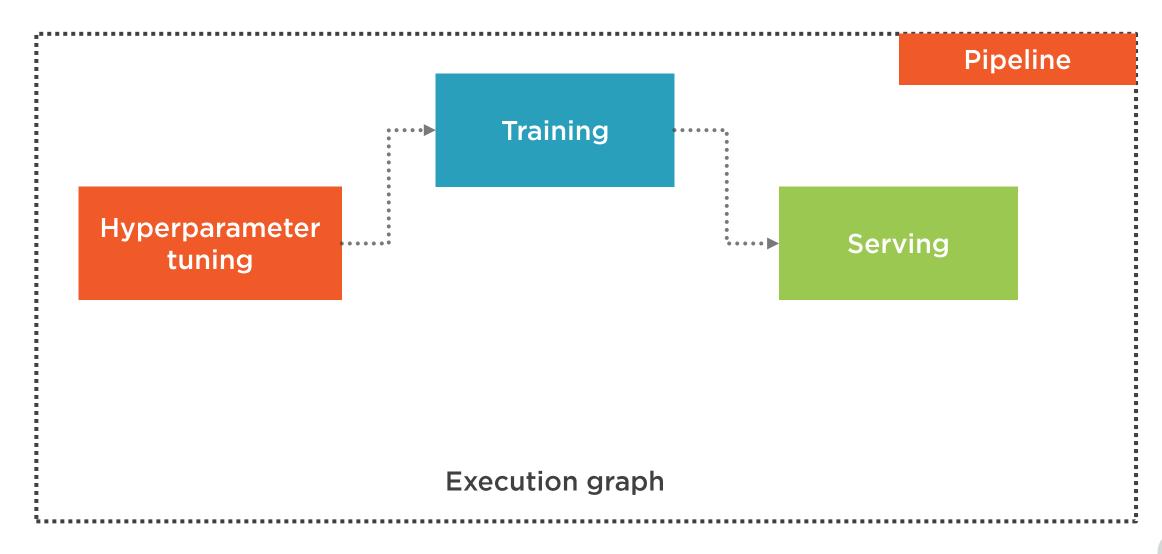








Kubeflow Pipeline







Building Kubeflow pipeline with hyperparameter tuning step





Adding training step to Kubeflow pipeline





Adding serving step to Kubeflow pipeline





Building Kubeflow pipeline from notebook



Summary



Pipeline

- Benefits and challenges

Kubeflow pipelines (KFP)

- Overview
- Build pipeline
 - Hyperparameter tuning
 - Training
 - Serving
- Build pipeline from notebook



Next up: What's Next?

