

Slides That are used a thumbnails in the `github/statmike/vertex-ai-mlops` repository

Notes:

- Do not insert new slides or reorder without updating the notebooks. The slides are exported to numbered .png files that are referenced in the notebooks

Process

- Save as PDF
- Copy to `github/statmike/vertex-ai-mlops/architectures/thumbnails`
- Convert PDF to PNG images
 - Use Notebook: `/architectures/Create Images.ipynb`
 - OUTPUT:
 - To: `/architectures/thumbnails/plain`
 - To: `/architectures/thumbnails/playbutton`



Vertex AI



Vertex AI for Machine Learning Operations

👋 I'm Mike

I want to share and enable [Vertex AI](#) from [Google Cloud](#) with you. The goal here is to share a comprehensive set of end-to-end workflows for machine learning that each cover the range of data to model to serving and managing - even automating the flow. Regardless of your data type, skill level or framework preferences you will find something helpful here.

Considerations

Data Type

- Tables: Tabular, structured data in rows and columns
- Language: Text for translation and/or understanding
- Vision: Images
- Video

Convenience Level

- Use Pre-Trained APIs
- Automate building Custom Models
- End-to-end Custom ML with core tools in the framework of your choice

Framework Preferences

- [Scikit-learn](#)
- [XGBoost](#)
- [Tensorflow](#)
- [Pytorch](#)
- More!

Overview

This is a series of workflow demonstrations that use the same data source to build and deploy the same machine

Introduction



Vertex AI



Environment Setup



Vertex AI



Data Source



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End-To-End: No Code



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End-To-End: Interactive Code



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End-To-End: Pipeline Orchestration



BigQuery Machine Learning

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End-To-End with SQL



BigQuery Machine Learning

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BQML to Online Predictions



BigQuery Machine Learning

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End-To-End Pipeline Orchestration

Conditionally Update Endpoints



Continuous Monitoring

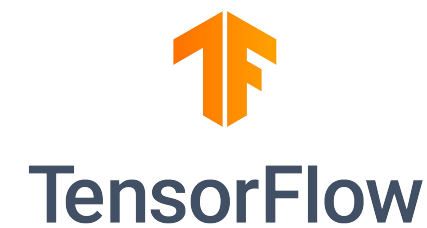
Vertex AI



Model Skew and Drift



Custom Training



Vertex AI



Custom Training in Notebook



Custom Training



Vertex AI



Custom Job

With Python File



Custom Training



Vertex AI



Custom Job

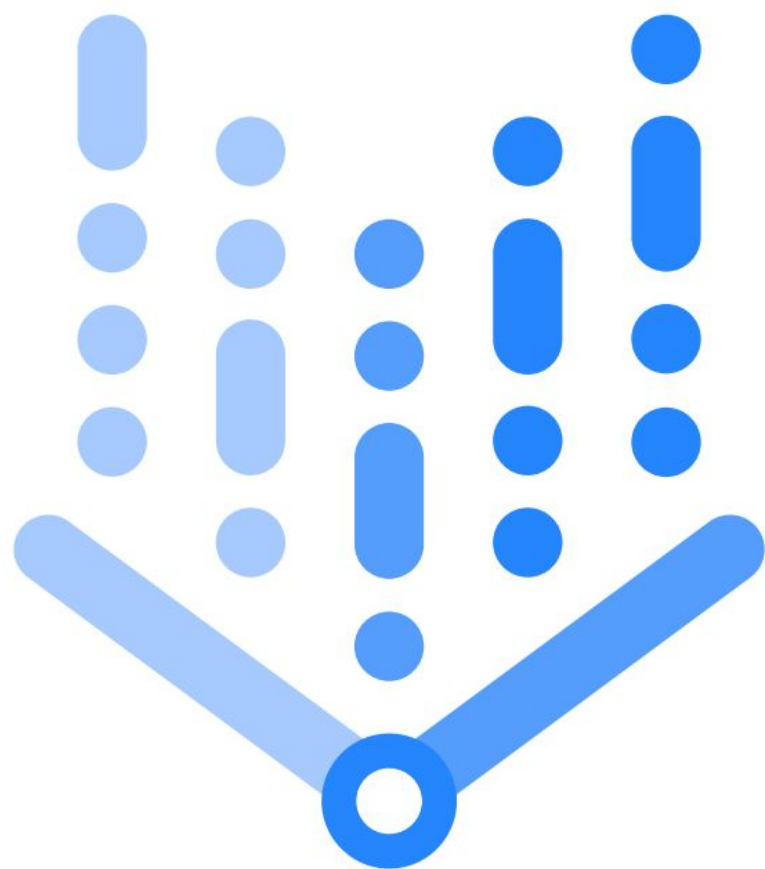
With Python Source Distribution



Custom Training



Vertex AI

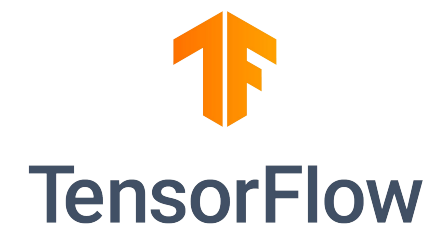


Training Pipeline

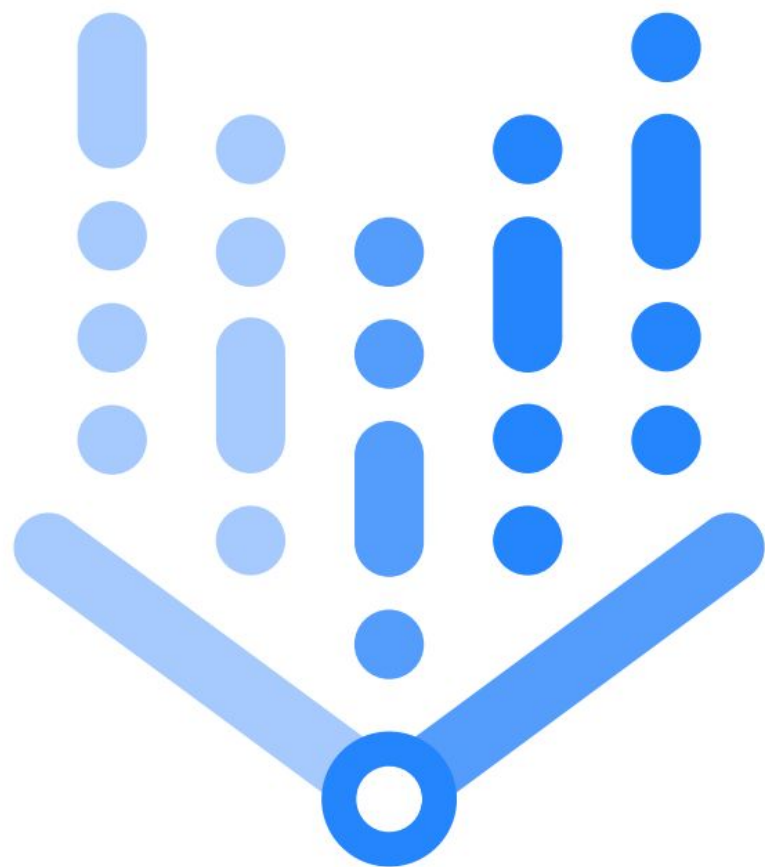
With Python File



Custom Training



Vertex AI

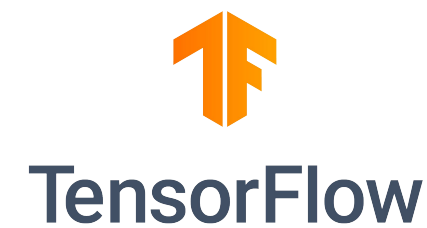


Training Pipeline

With Python Source Distribution



Custom Training



Vertex AI

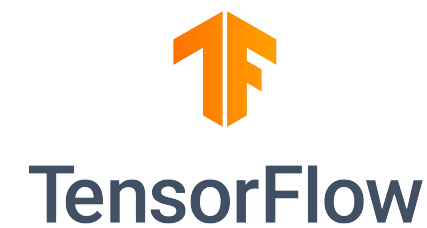


Hyperparameter Tuning Job

With Python File



Custom Training



Vertex AI



Hyperparameter Tuning Job

With Python Source Distribution



Vertex AI



Vizier Optimization Service



Vertex AI



Feature Store