# Airflow for ML at Twitter

@Dan Davydov

June 7th, 2020

# Agenda

1. How Twitter uses Airflow for ML
2. Airflow pain points (focus on ML)
3. Future of Airflow @ Twitter

# Airflow @ Twitter

~400 DAG Files

~30 Customer Teams

Mostly ML Use-Cases

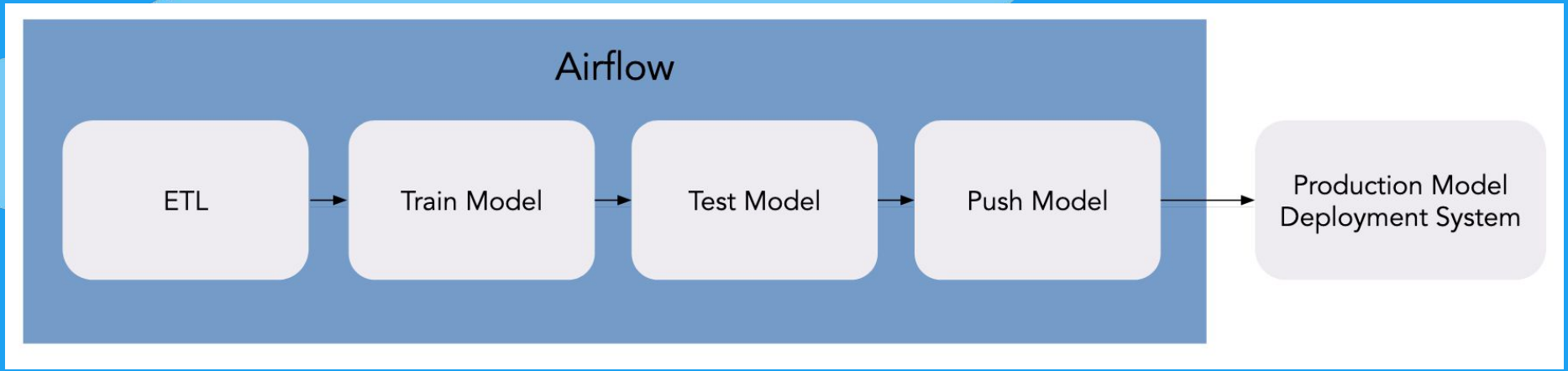
# Airflow ML Stack

Google Cloud Platform

TensorFlow

kubernetes

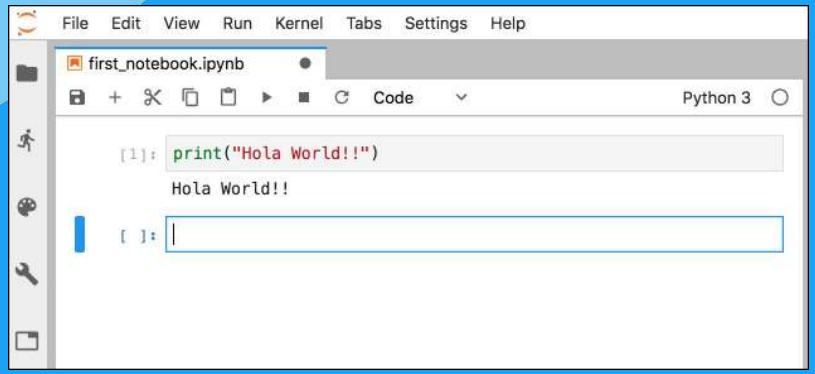
# Typical ML Airflow Pipeline

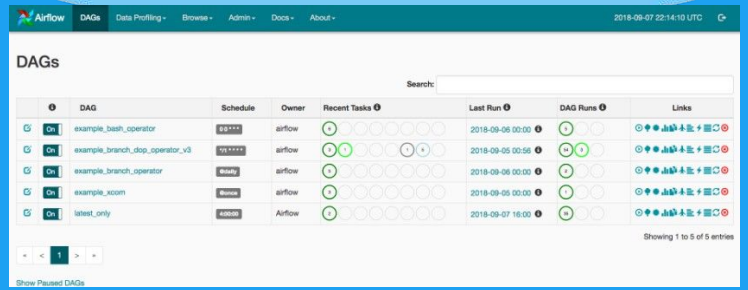


# Airflow Pain Points

# Development Speed

VS

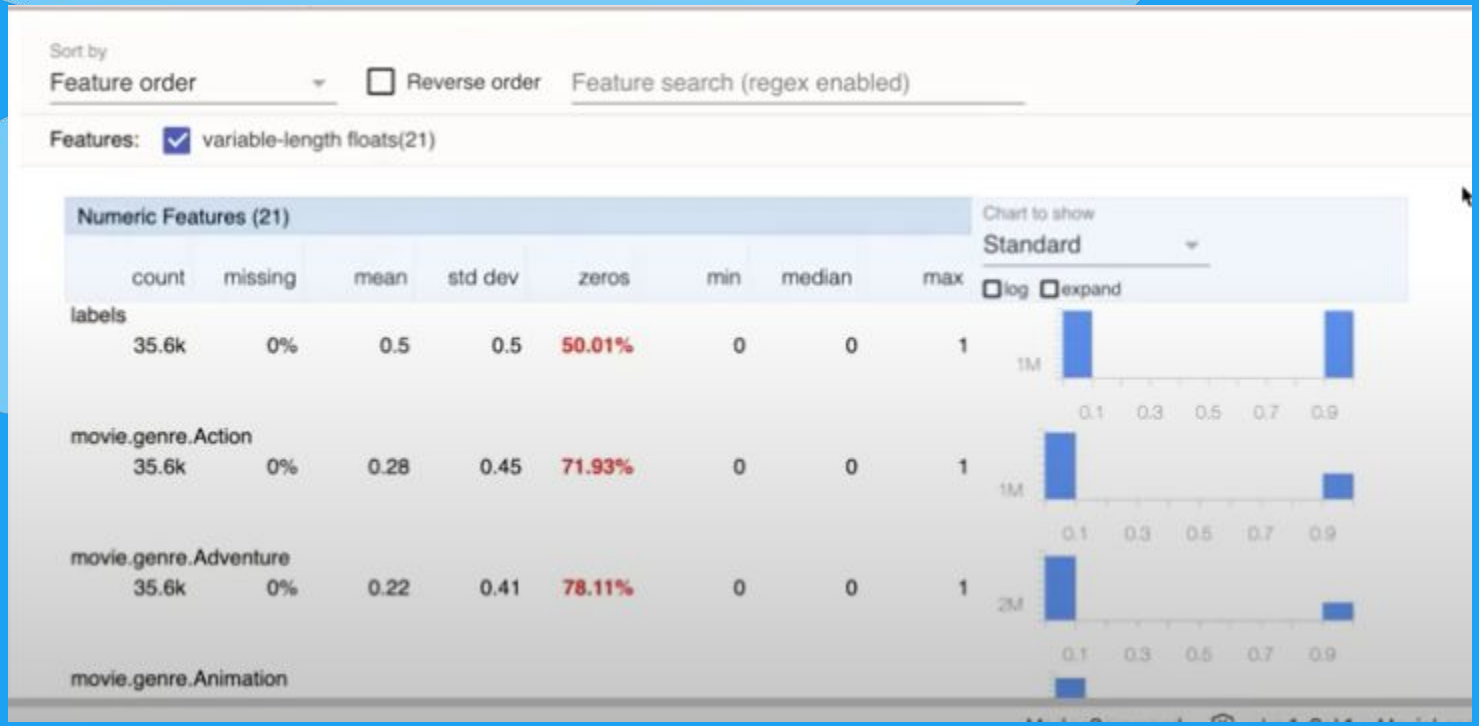


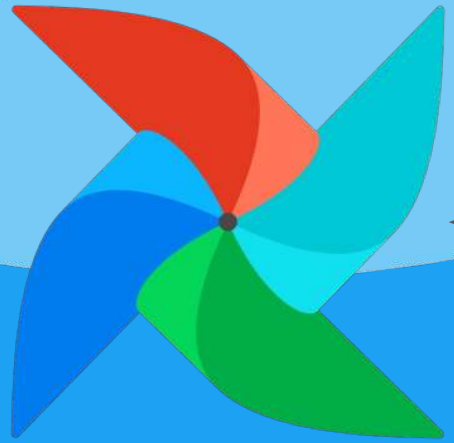
# Clunky Interfaces

```
def push(**kwargs):
    # pushes an XCom without a specific target
    kwargs['ti'].xcom_push(key='value from pusher 1', value=value_1)
```

# Lack of First-Class ML Tooling Integration



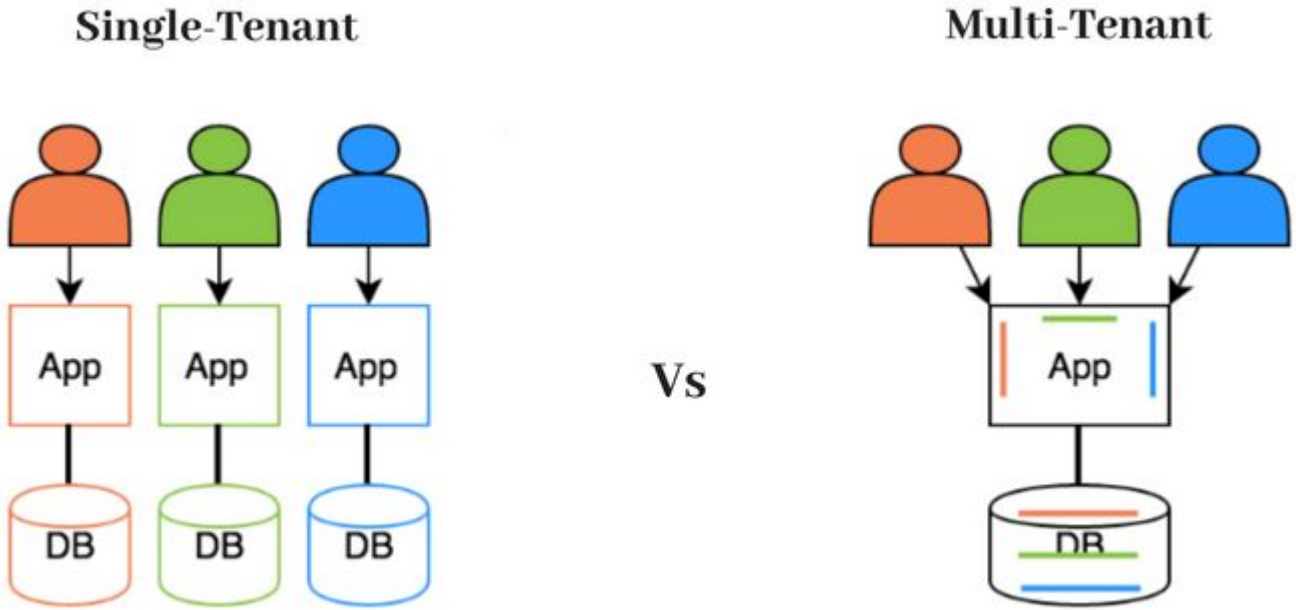
# Lack of OSS ML Operators



?

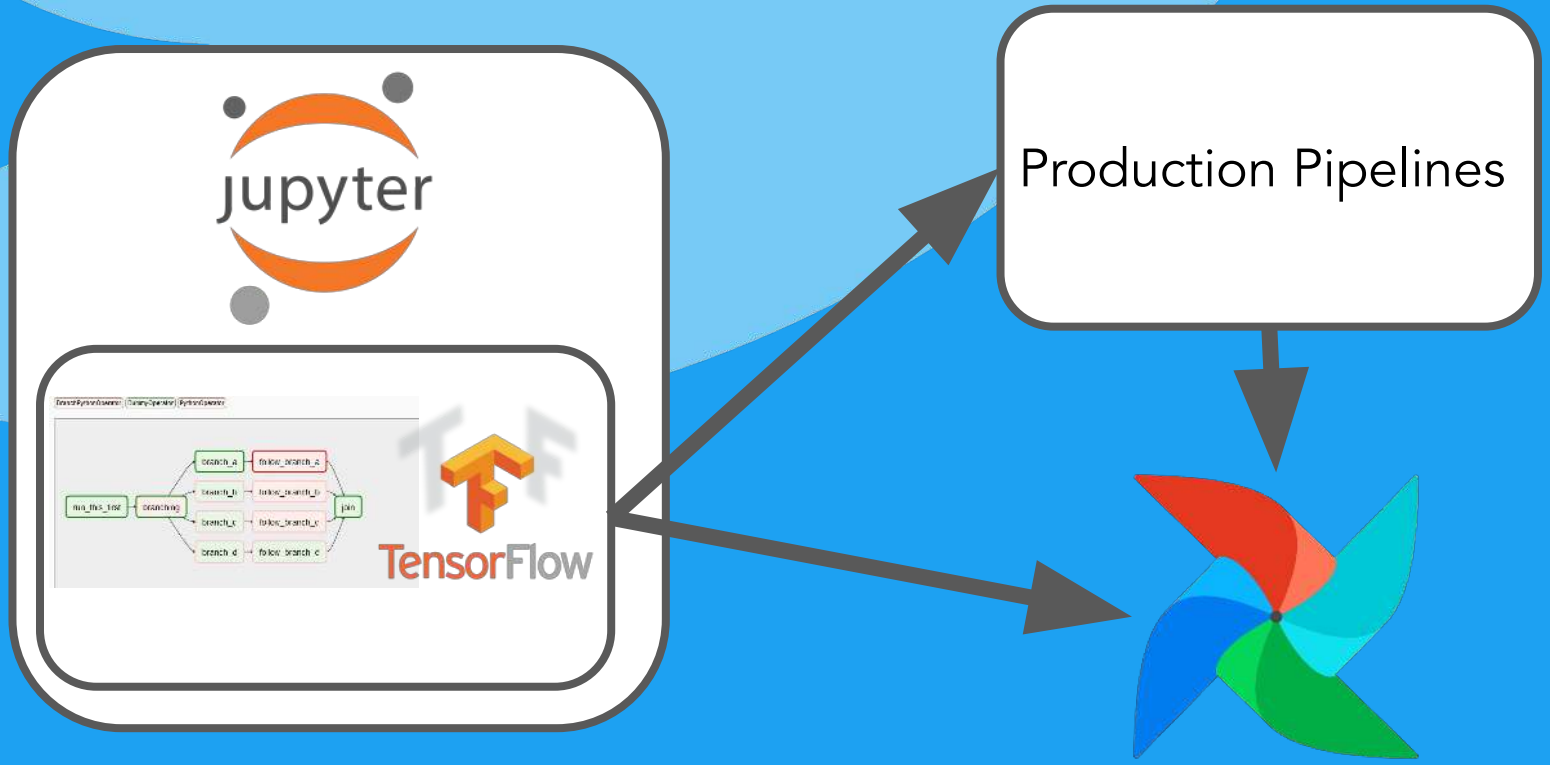
TensorFlow

# No Multi-tenancy



# Future of Airflow for ML @ Twitter

# Airflow as Job Dispatch



# Thanks For Watching!