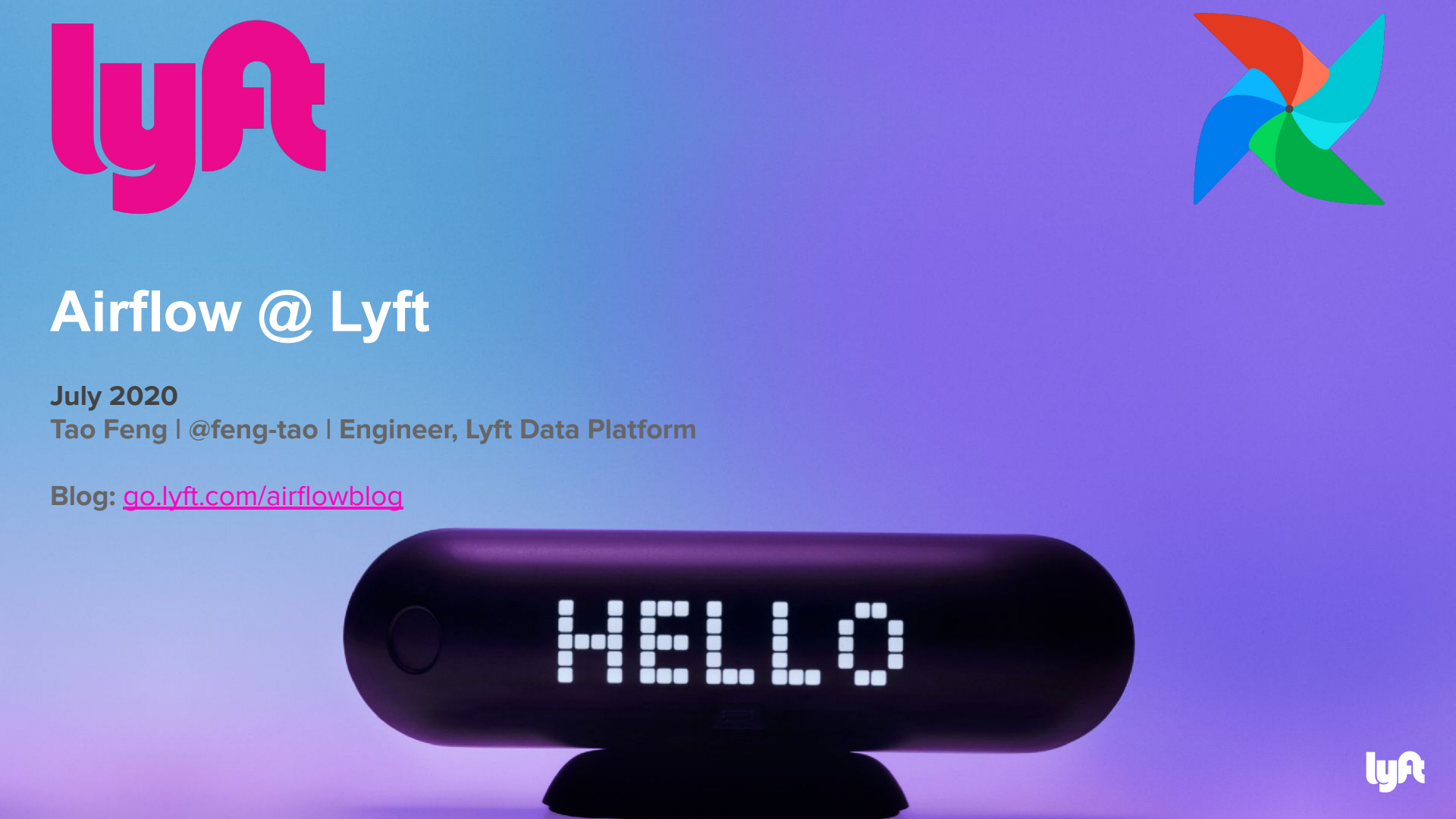


Airflow @ Lyft

July 2020

Tao Feng | @feng-tao | Engineer, Lyft Data Platform

Blog: go.lyft.com/airflowblog

Who

- Engineer at Lyft Data Platform and Tools
- Apache Airflow PMC and Committer
- Working on different data products (Airflow, Amundsen, etc)
- Previously at Linkedin, Oracle

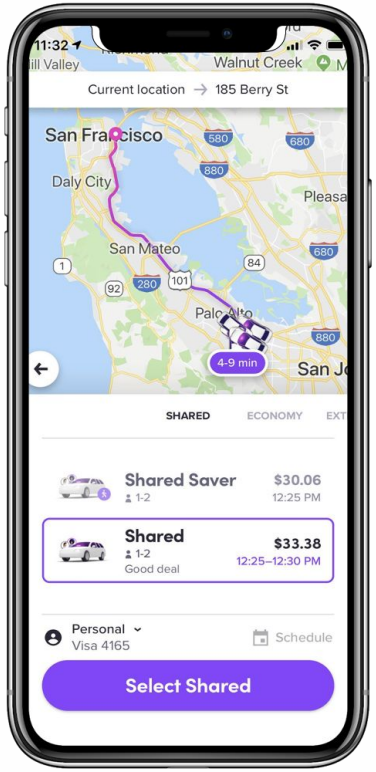
Agenda

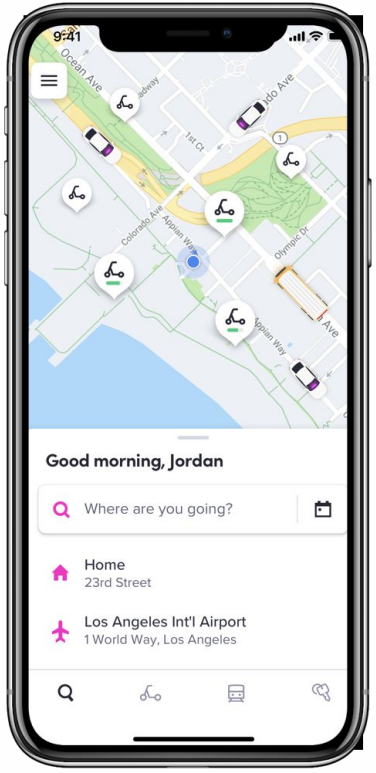
- Data Platform @ Lyft
- Airflow Customization @ Lyft
- Current Focus For Airflow @ Lyft
- Summary

Data Platform @ Lyft

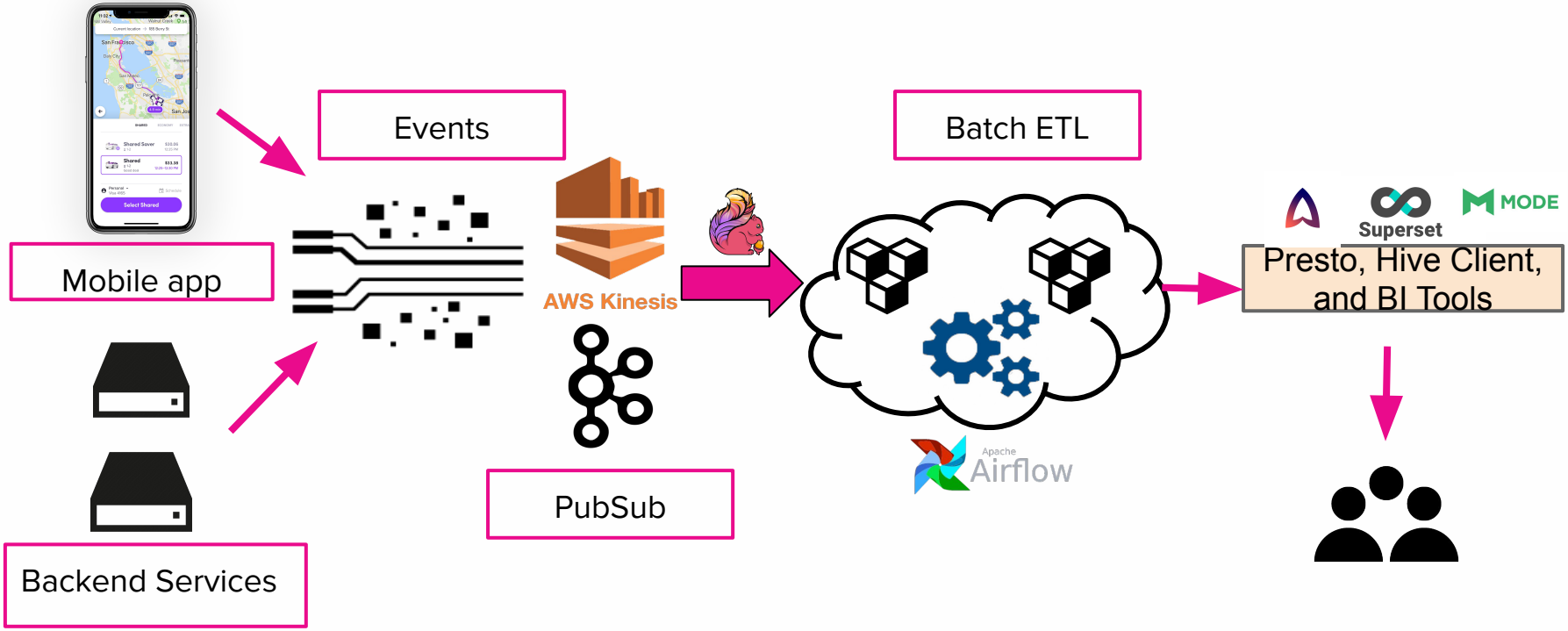
About Lyft

MISSION: Improve people's life with the world's best transportation

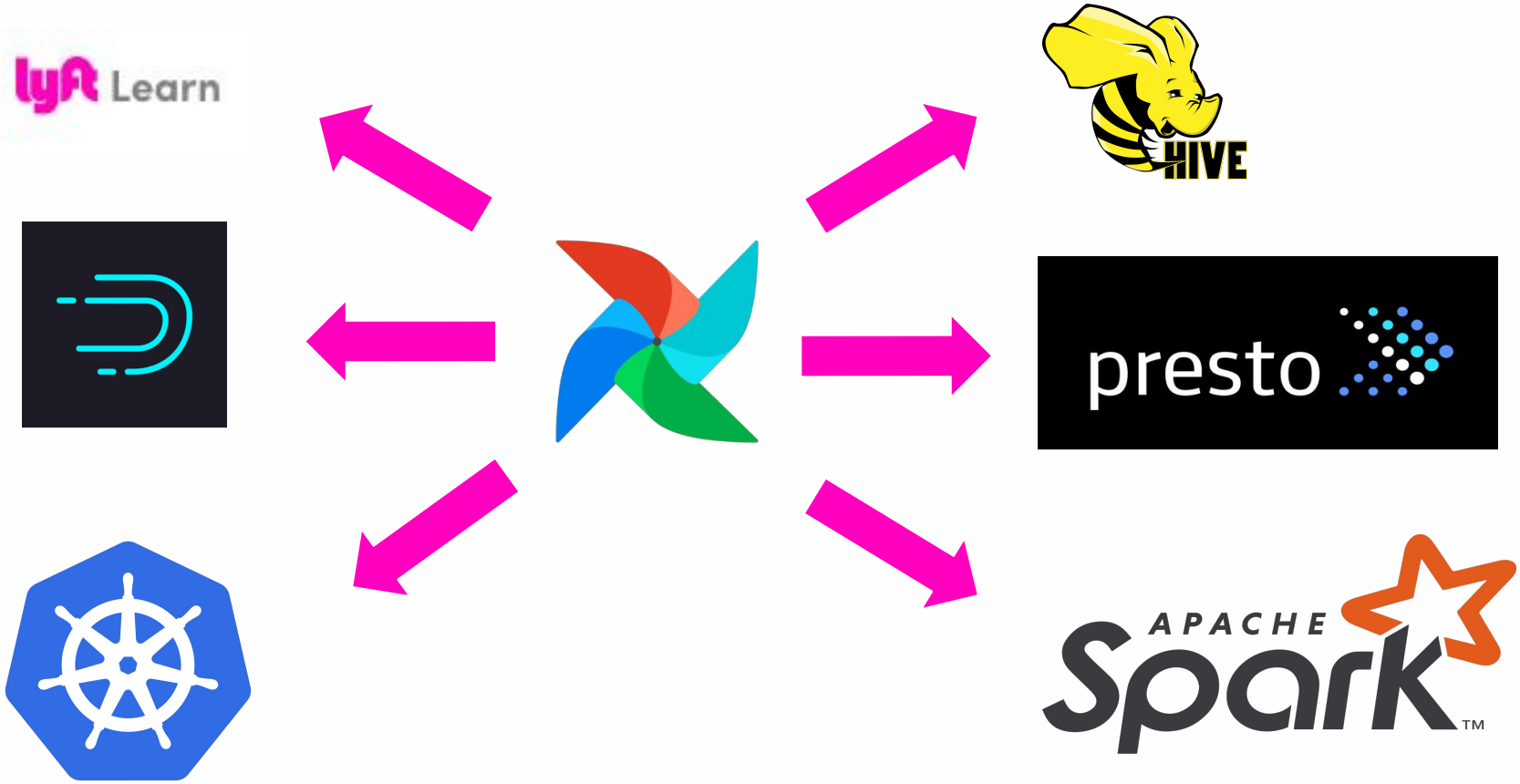




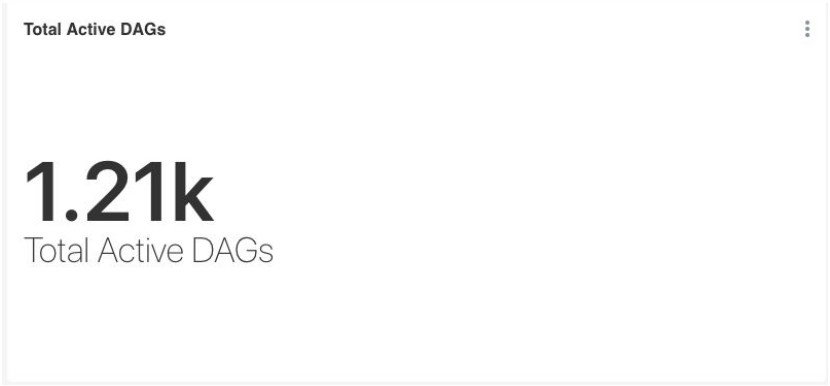
Lyft's data analytics platform architecture

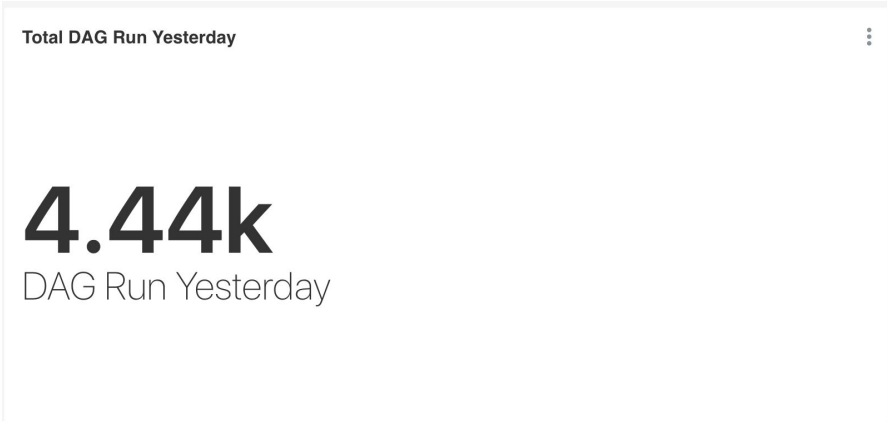


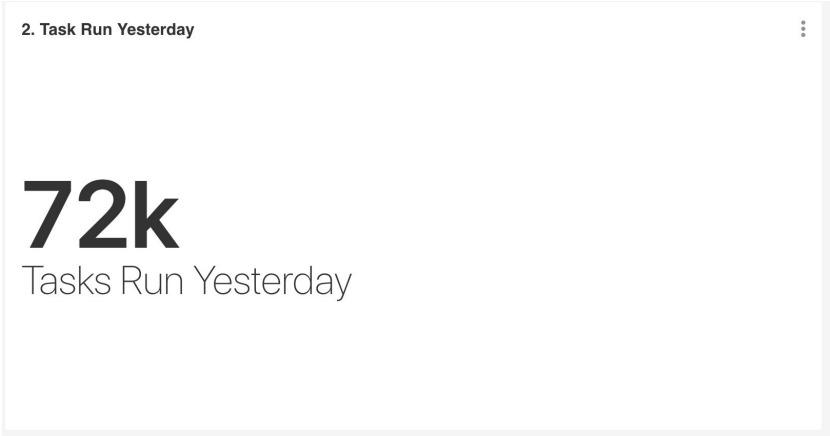
Airflow main use cases @ Lyft



Airflow usage @ Lyft







- Two Clusters
- Celery Executors

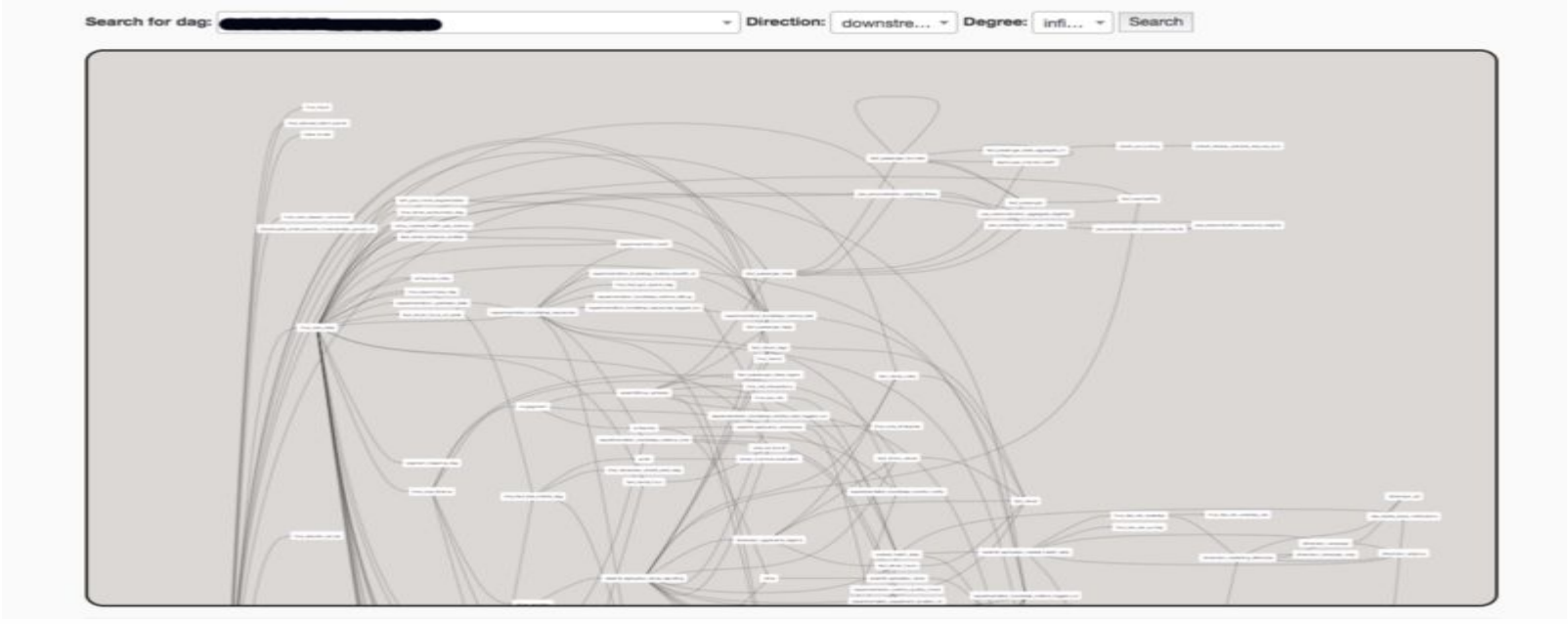
Airflow Customization @ Lyft

Airflow customization @ Lyft

- UI auditing

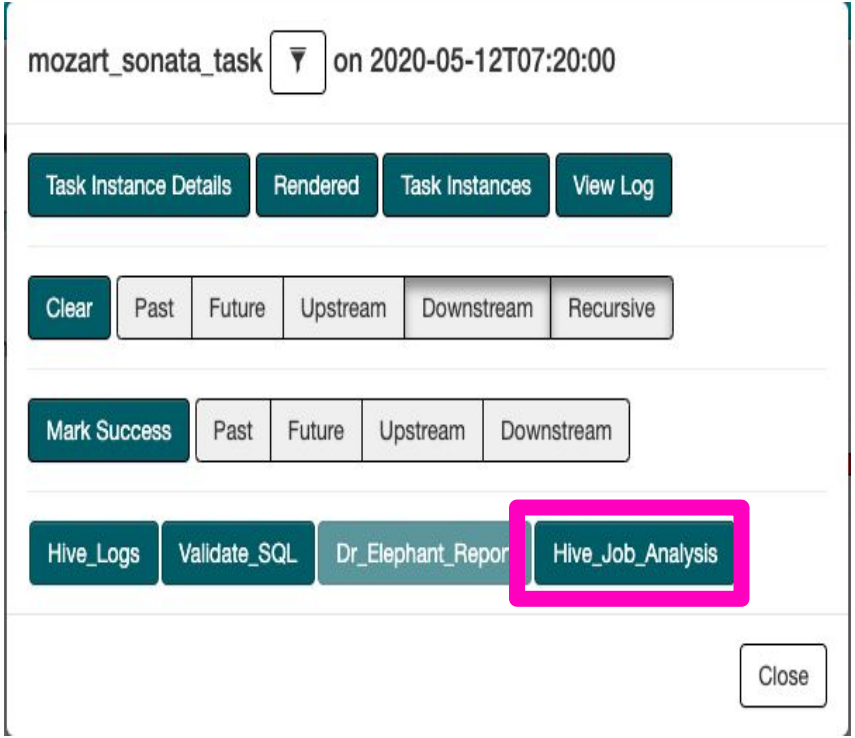
24914052	12-11T04:27:58.789532	None		ui_action	[redacted]	{'message': 'turn off dag - fact_user_messages'}

- DAG dependency graph

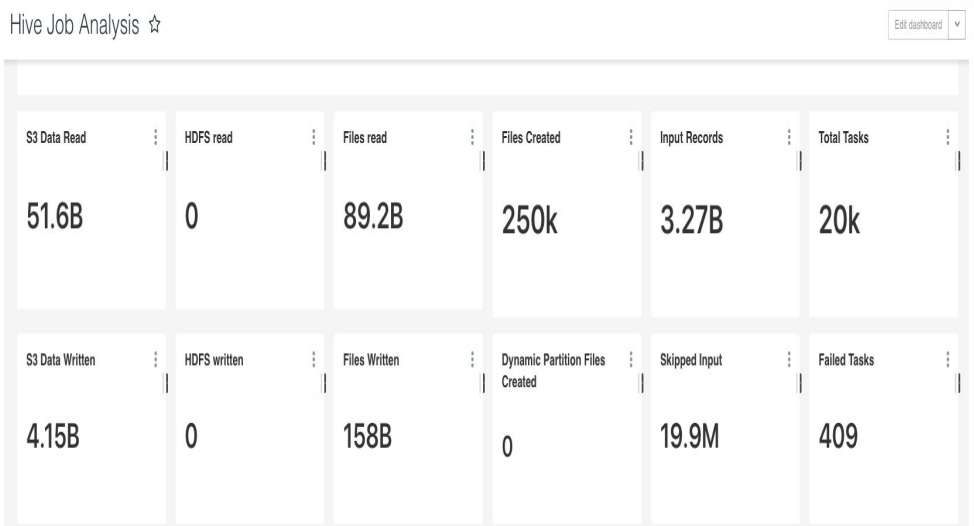


Airflow customization @ Lyft

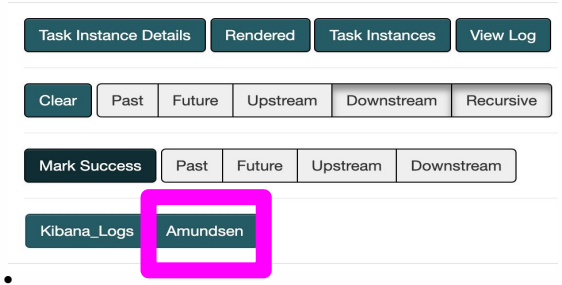
- Extra link for task instance UI panel



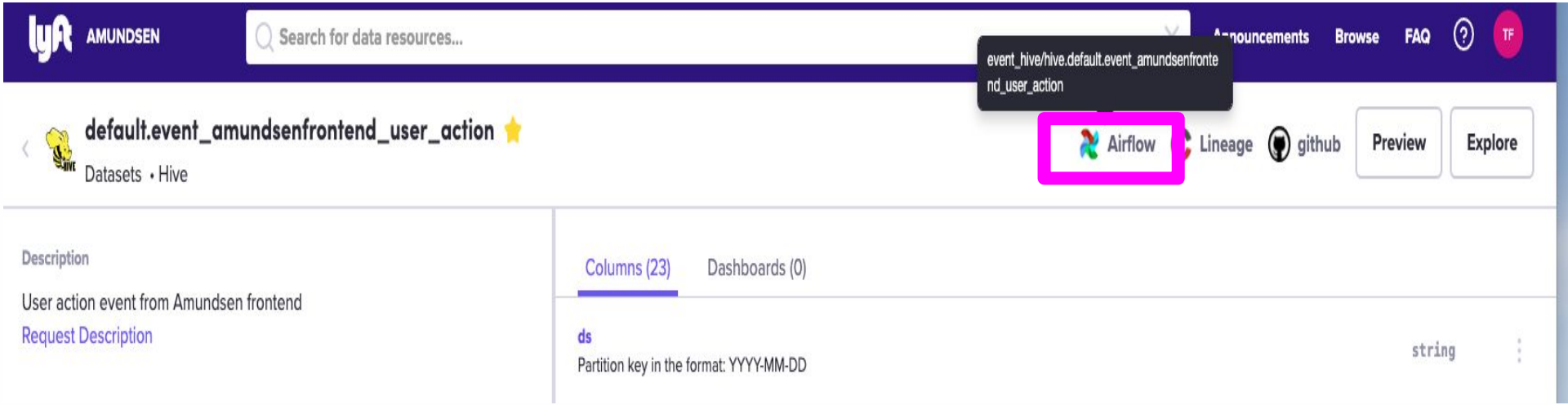
- Hive query log
- *Dr elephant report* for performance tuning
- Hive job analysis dashboard



Airflow customization @ Lyft



- Amundsen is an **open-sourced** data discovery portal.
- It is integrated with Airflow to show the *task and table* **lineage**.
- It is currently used by **18+** companies.

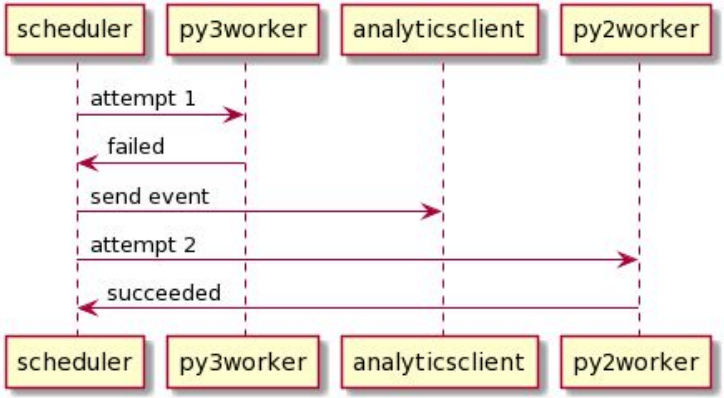


Current Focus For Airflow @ Lyft

ETL Expiration System

- Lots of ETLs are not well maintained with no clear ownership.
- Built an ETL Expiration system to:
  - Disabled DAGs with expired TTLs (DAG owner needs to renew the TTL every six months).
  - Disabled DAGs that produced unused datasets
  - Disabled DAGs that are failing for a long time

PY2 -> PY3



- Built a dashboard to understand PY3 issue.
  - Most issues are related to *string encoding* or *string and integer comparison*.
- DAG loading time is higher in py3 compared to py2
  - Cherry pick a few performance improvement patches from upstream

DAGs failing on py3

	dag_id	num_dag_runs	latest_dag_run	num_failures
1	event_hive	8	2020-06-23T02:30:00	3311
2	hive_core_rides	6	2020-06-23T00:00:00	34
3	fact_green_charges	3	2020-06-23T00:00:00	26
4	driving_supply_control_open_driving_hour	1	2020-06-12T17:00:00	2
5	paymongodep_beta_hive_pax_growth_subscriptions_dag	1	2020-06-06T00:00:00	6

Airflow Upgrade

- Leverage new features:
  - DAG serialization
  - RBAC
  - Data Lineage
  - Performance Improvements

- Current status:
  - Built a new multi-tenant cluster to onboard new use cases.
  - Finishing PY3 upgrade for legacy DAGs.
  - Converting the existing legacy mono DAG repo as another tenant on the new cluster.

Summary

Summary

- Covers Lyft data platform in general
- Discusses about Airflow customization at Lyft
- Discusses about Airflow current work at Lyft

Acknowledgement

- Members who maintain Airflow at Lyft
  - Andrew Stahlman
  - Bhanu Renukuntla
  - Chao-han Tsai (committer)
  - Jinhyuk Chang
  - Junda Yang
  - Max Payton
  - Sherry Zhao
  - Shenghu Yang (EM)
  - Tao Feng (committer)
- Thanks Maxime for his guidance

Tao Feng | @feng-tao

Blog at go.lyft.com/airflowblog