

# MODEL EXPERIMENTATION

# Screenshot of all Experiments

The screenshot displays the mlflow web interface. At the top, the navigation bar includes the mlflow logo (version 1.26.1), tabs for 'Experiments' and 'Models', and links to 'GitHub' and 'Docs'. The main section is titled 'Experiments' and shows a list of experiments on the left: 'Default', 'Baseline\_model\_exp01' (selected), 'Lead\_scoring\_mlflow\_...', and 'sel\_features\_exp01'. The right pane shows details for 'Baseline\_model\_exp01', including a notification to track machine learning training runs, the experiment ID (1), and a description. Below this, there are action buttons like 'Refresh', 'Compare', 'Delete', and 'Download CSV'. A search bar and filter options are also present. The table below shows 38 matching runs, with columns for Start Time, Duration, Run Name, User, Source, Version, Models, and Metrics (AUC). The first three rows are visible, showing runs initiated by 'root' using 'ipykerne...' as the source.

mlflow 1.26.1 Experiments Models GitHub Docs

Experiments +< Baseline\_model\_exp01 Share

Search Experiments

Default Baseline\_model\_exp01 Lead\_scoring\_mlflow\_... sel\_features\_exp01

Track machine learning training runs in experiments. [Learn more](#)

Experiment ID: 1

Description Edit

Refresh Compare Delete Download CSV Start Time All time

Columns Only show differences metrics.rmse < 1 and params.model = "tree" Search Filter Clear

Showing 38 matching runs

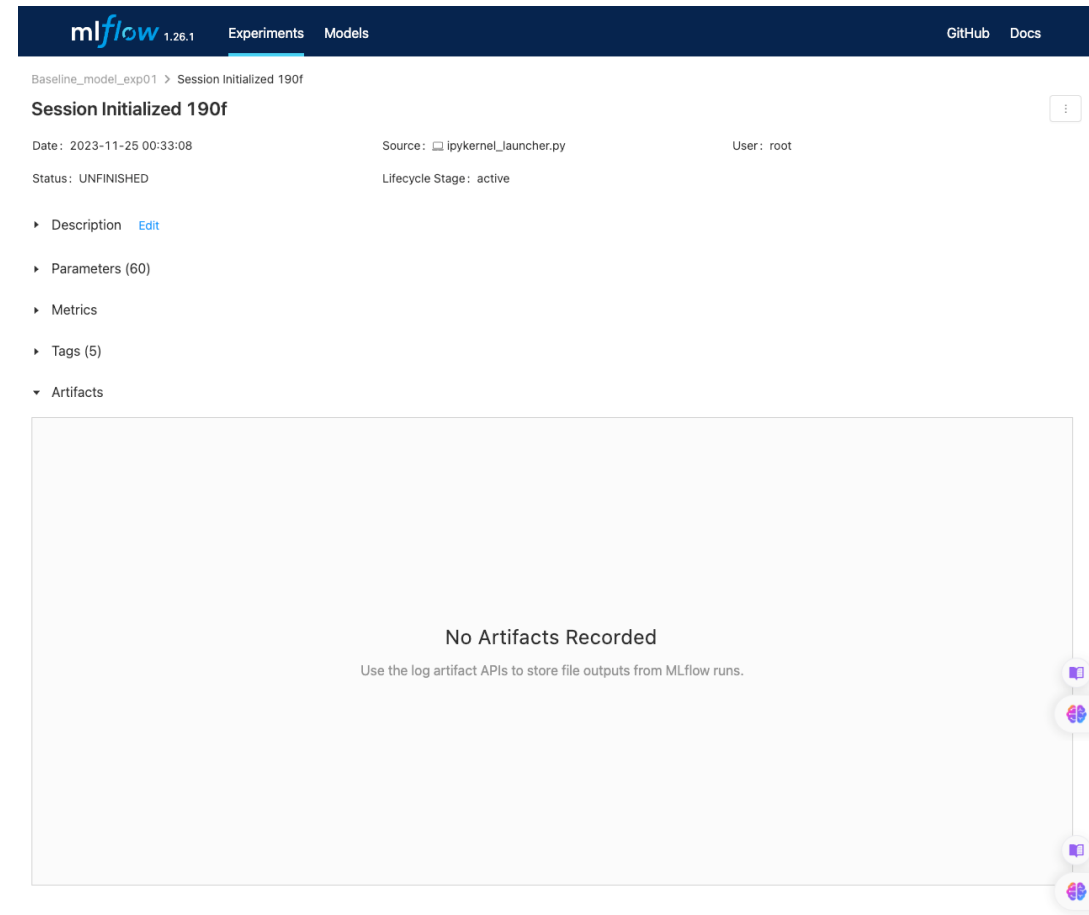
|                          |                |          |                 |      |             |         |        | Metrics |
|--------------------------|----------------|----------|-----------------|------|-------------|---------|--------|---------|
|                          | Start Time     | Duration | Run Name        | User | Source      | Version | Models | AUC     |
| <input type="checkbox"/> | 12 minutes ago |          | Session Init... | root | ipykerne... | -       | -      | -       |
| <input type="checkbox"/> | 13 hours ago   |          | Session Init... | root | ipykerne... | -       | -      | -       |

Load more

# Screenshot of one experiments with all the artifacts visible

Even though the experiment ran from the training notebook, only the experiment is visible in mlflow but the metrics and models are not logged.

The pycaret documentation says logging of model artifacts is not supported by default for mlflow



# Screenshot of all the experiments (after dropping features)

The screenshot shows the mlflow web interface. The top navigation bar includes the mlflow logo (version 1.26.1), tabs for 'Experiments' and 'Models', and links to 'GitHub' and 'Docs'. The main header shows 'Experiments' with a search bar and a list of experiments: 'Default', 'Baseline\_model\_exp01', 'Lead\_scoring\_mlflow...', and 'sel\_features\_exp01' (which is selected). The selected experiment 'sel\_features\_exp01' is shown with its details: 'Experiment ID: 3', a description, and a list of runs. The runs table shows 11 matching runs, with the first run being 'Session Init...' by 'root' using 'ipykerne...' as the source. The table has columns for Start Time, Duration, Run Name, User, Source, Version, Models, and Metrics (AUC). A 'Load more' button is visible below the table.

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Experiments **sel\_features\_exp01** Share

Search Experiments

Default Baseline\_model\_exp01 Lead\_scoring\_mlflow... sel\_features\_exp01

Track machine learning training runs in experiments. [Learn more](#)

Experiment ID: 3

Description Edit

Refresh Compare Delete Download CSV Start Time All time

Columns Only show differences metrics.rmse < 1 and params.model = "tree" Search Filter Clear

Showing 11 matching runs

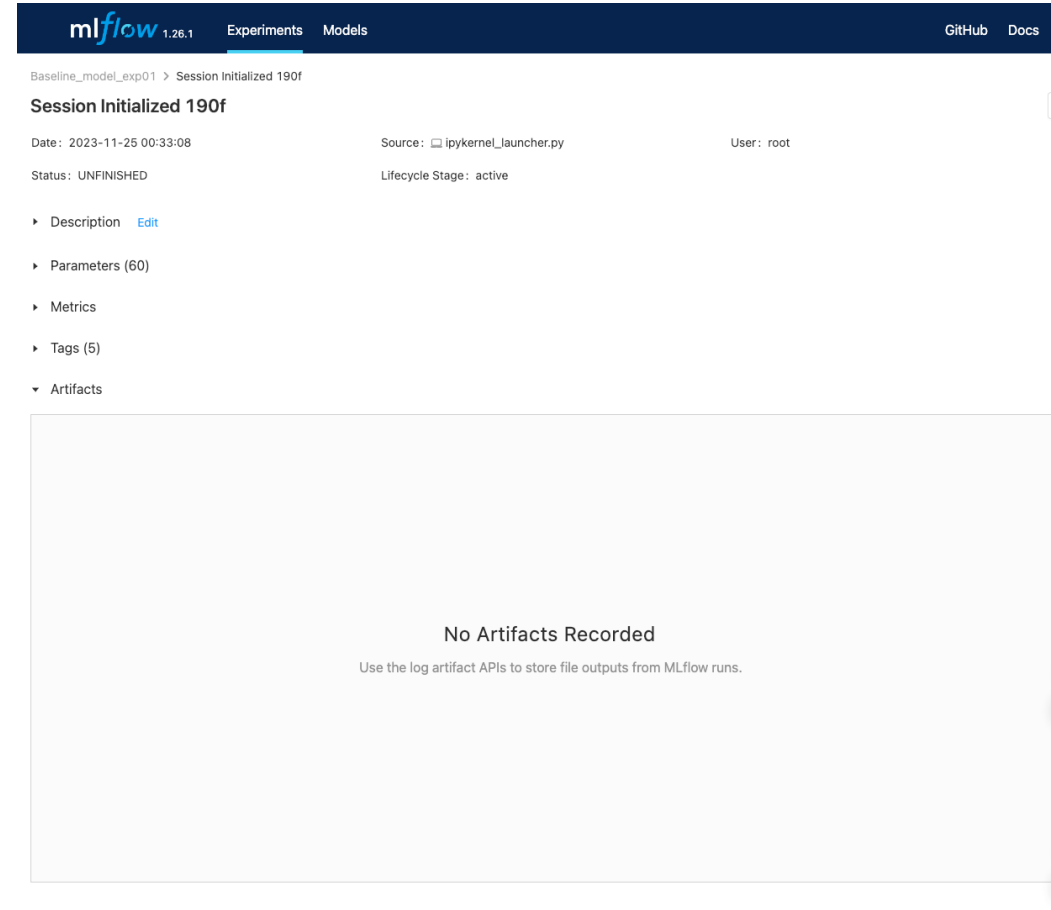
|                          |                | Duration | Run Name        | User | Source      | Version | Models | Metrics |
|--------------------------|----------------|----------|-----------------|------|-------------|---------|--------|---------|
| <input type="checkbox"/> | Start Time     |          |                 |      |             |         |        | AUC     |
| <input type="checkbox"/> | 12 minutes ago |          | Session Init... | root | ipykerne... | -       | -      | -       |

Load more

# Screenshot of one experiments with all the artifacts visible (after dropping features)

Even though the experiment ran from the training notebook, only the experiment is visible in mlflow but the metrics and models are not logged.

The pycaret documentation says logging of model artifacts is not supported by default for mlflow



# TRAINING PIPELINE

# Screenshot of experiments with all the artifacts visible

Line #3 (LightGBM/7, with metrics info)

The screenshot shows the mlflow Experiments page for the experiment 'Lead\_scoring\_mlflow\_production'. The interface includes a search bar, a list of experiments (Default, Baseline\_model\_exp01, and the selected Lead\_scoring\_mlflow\_...), and a detailed view of the experiment. The experiment ID is 2. The description is empty. The interface includes buttons for Refresh, Compare, Delete, Download CSV, Start Time, and All time. A filter bar shows 'metrics.rmse < 1 and params.model = "tree"'. The table displays 7 matching runs. The selected run (Line #3) is 'LightGBM/7' with a False Negative of 6303, Precision of 0.739, Precision\_0 of 0.786, bagging\_fraction of 0.6, bagging\_frequency of 3, and boosting\_type of gbdt.

|                          | Start Time  | Duration | Run Name | Models     | False Negative | Precision | Precision_0 | bagging_fraction | bagging_frequency | boosting_type |
|--------------------------|-------------|----------|----------|------------|----------------|-----------|-------------|------------------|-------------------|---------------|
| <input type="checkbox"/> | 25 minutes  | 2.0s     | predict  | -          | -              | -         | -           | -                | -                 | -             |
| <input type="checkbox"/> | 38 minutes  | 8.3s     | predict  | -          | -              | -         | -           | -                | -                 | -             |
| <input type="checkbox"/> | 7 hours ago | 9.2s     | train    | LightGBM/7 | 6303           | 0.739     | 0.786       | 0.6              | 3                 | gbdt          |
| <input type="checkbox"/> | 7 hours ago | 8.8s     | train    | LightGBM/6 | -              | -         | -           | 0.6              | 3                 | gbdt          |
| <input type="checkbox"/> | 7 hours ago | 8.8s     | train    | LightGBM/5 | -              | -         | -           | 0.6              | 3                 | gbdt          |
| <input type="checkbox"/> | 7 hours ago | 8.7s     | train    | LightGBM/4 | -              | -         | -           | 0.6              | 3                 | gbdt          |
| <input type="checkbox"/> | 7 hours ago | 8.9s     | train    | LightGBM/3 | -              | -         | -           | 0.6              | 3                 | gbdt          |

Load more

# Screenshot of model registry with model name and stage as 'production'

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Registered Models

Share and manage machine learning models. [Learn more](#)

Create Model

Search by model name Search Filter Clear

| Name     | Latest Version | Staging | Production | Last Modified       | Tags |
|----------|----------------|---------|------------|---------------------|------|
| LightGBM | Version 7      | —       | Version 7  | 2023-11-24 16:48:44 | —    |

< 1 > 10 / page

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Registered Models > LightGBM

LightGBM

Created Time: 2023-11-24 16:28:51 Last Modified: 2023-11-24 16:48:44

Description [Edit](#)

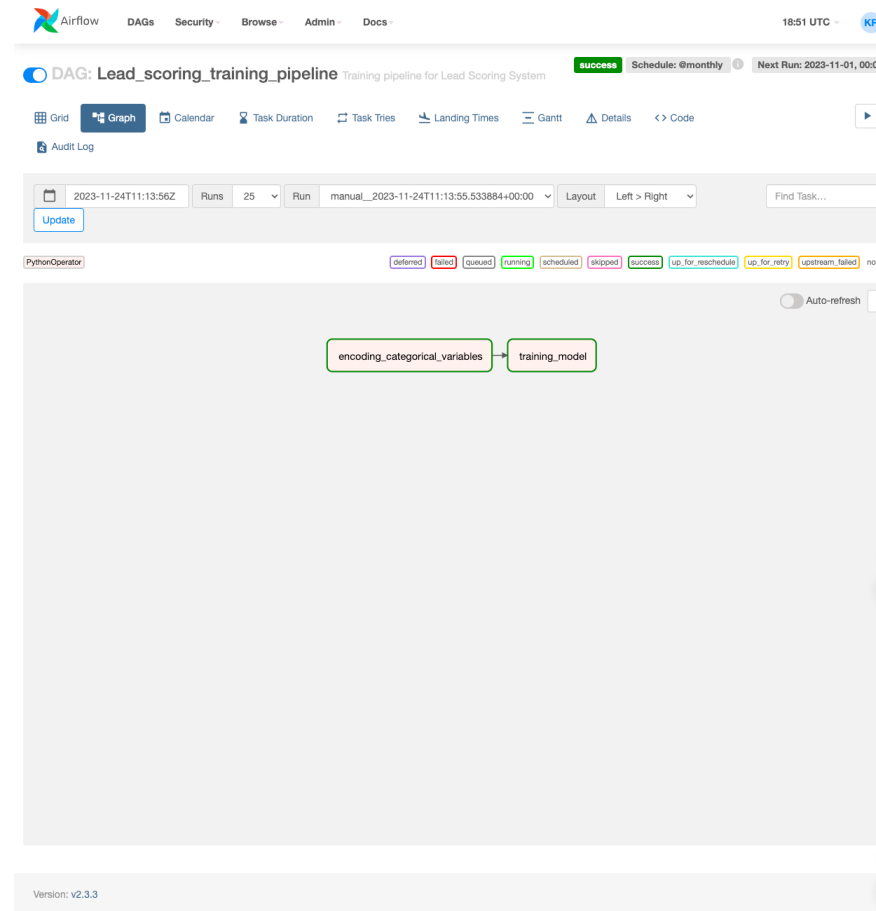
Tags

Versions All Active 1 Compare

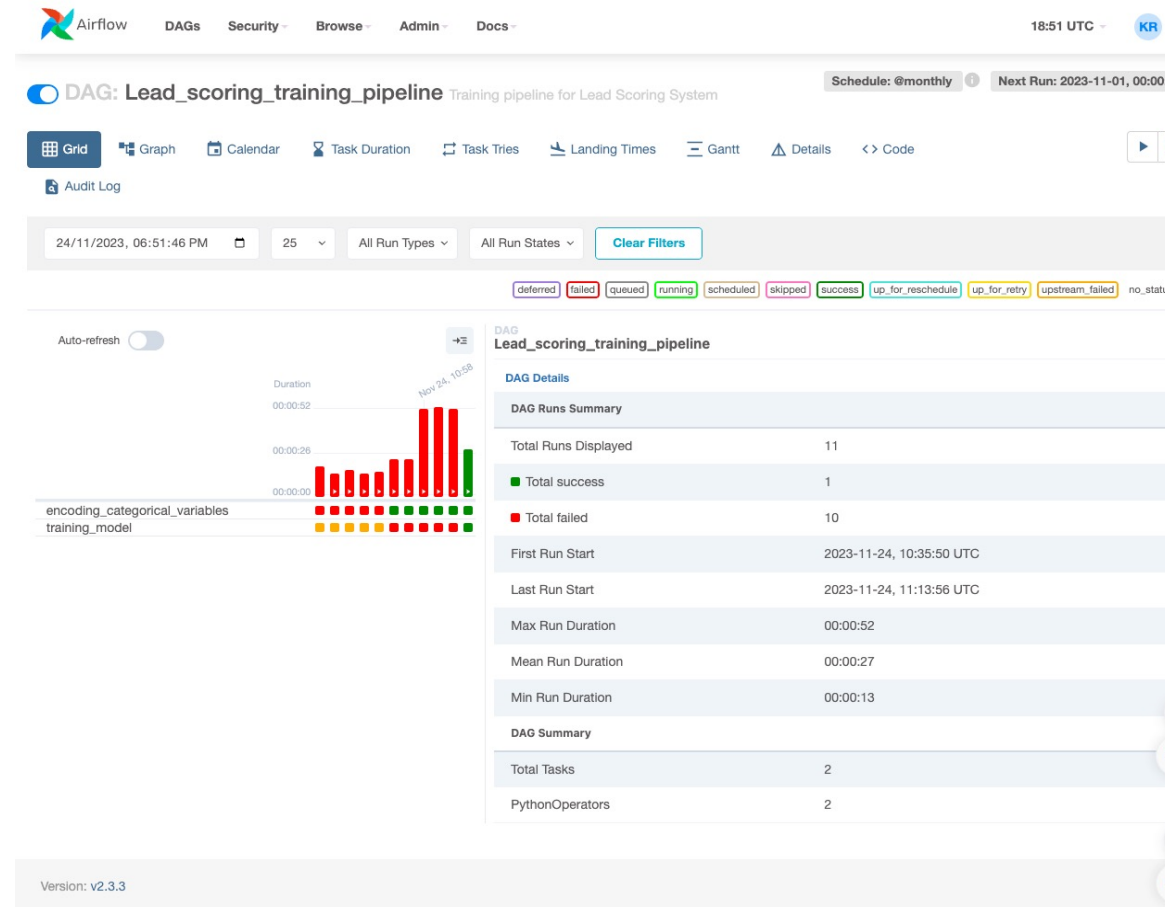
| <input type="checkbox"/> | Version                                       | Registered at       | Created by | Stage      | Description |
|--------------------------|---|---------------------|------------|------------|-------------|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> Version 7 | 2023-11-24 16:44:22 |            | Production |             |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> Version 6 | 2023-11-24 16:41:53 |            | None       |             |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> Version 5 | 2023-11-24 16:41:31 |            | None       |             |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> Version 4 | 2023-11-24 16:39:56 |            | None       |             |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> Version 3 | 2023-11-24 16:39:32 |            | None       |             |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> Version 2 | 2023-11-24 16:29:15 |            | None       |             |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> Version 1 | 2023-11-24 16:28:51 |            | None       |             |



# Screenshot of successful execution Airflow DAG in graph

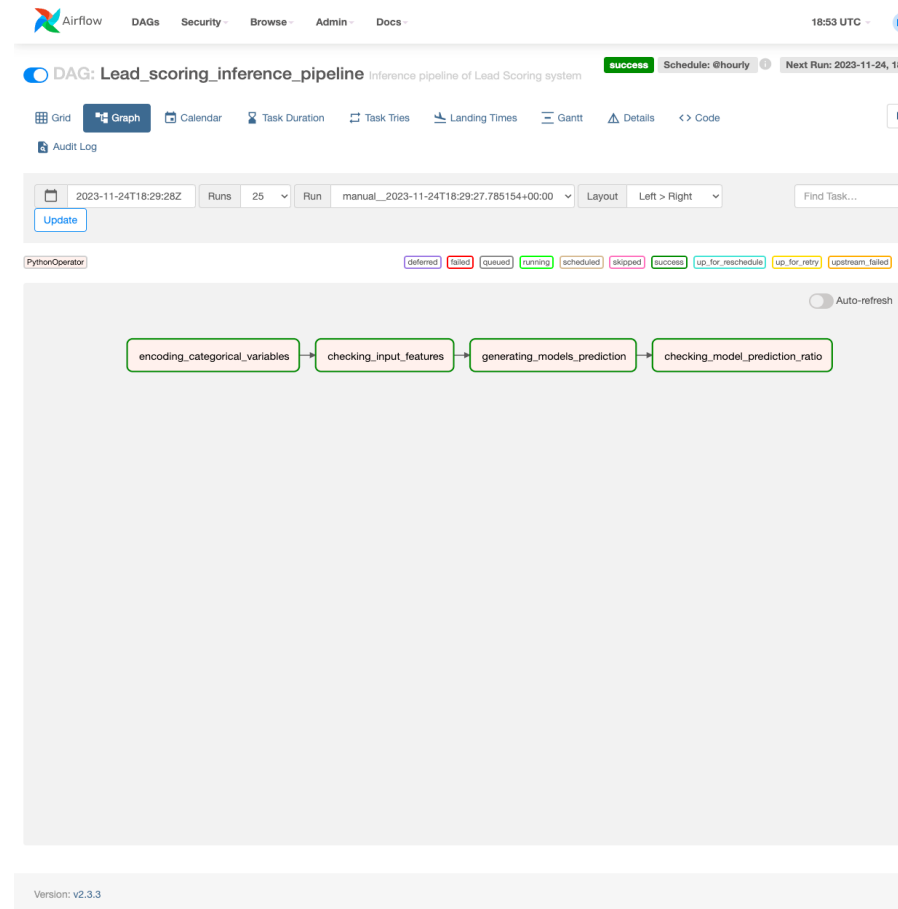


# Screenshot of Airflow UI grid



# INFERENCE PIPELINE

# Screenshot of successful execution Airflow DAG in graph



# Screenshot of Airflow UI grid

