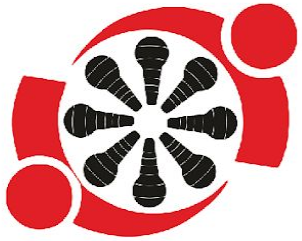

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RESEARCH LABS

INNOVATION. AUTOMATION. ANALYTICS

PROJECT ON

Using MLflow for Experiment Tracking and Model Management-
Sentiment Analysis of Flipkart Reviews

Prepared by Eleshala Pravalika

Objective of the Report:

- The objective is to introduce MLflow for experiment tracking, model management, and reproducibility in **Sentiment Analysis of Flipkart reviews**.

MLFlow:

MLFlow: Unified Platform for Experiment Tracking and Model Registry

MLflow is an open-source platform for managing the end-to-end machine learning lifecycle. It provides a suite of tools and components designed to streamline the development, experimentation, productionisation, and collaboration aspects of machine learning projects. MLflow is widely used by data scientists, machine learning engineers, and researchers to track experiments, package and share code, and deploy models at scale.

Key Features:

1. Experiment Tracking
2. Model Registry

Integration of MLflow into projects:

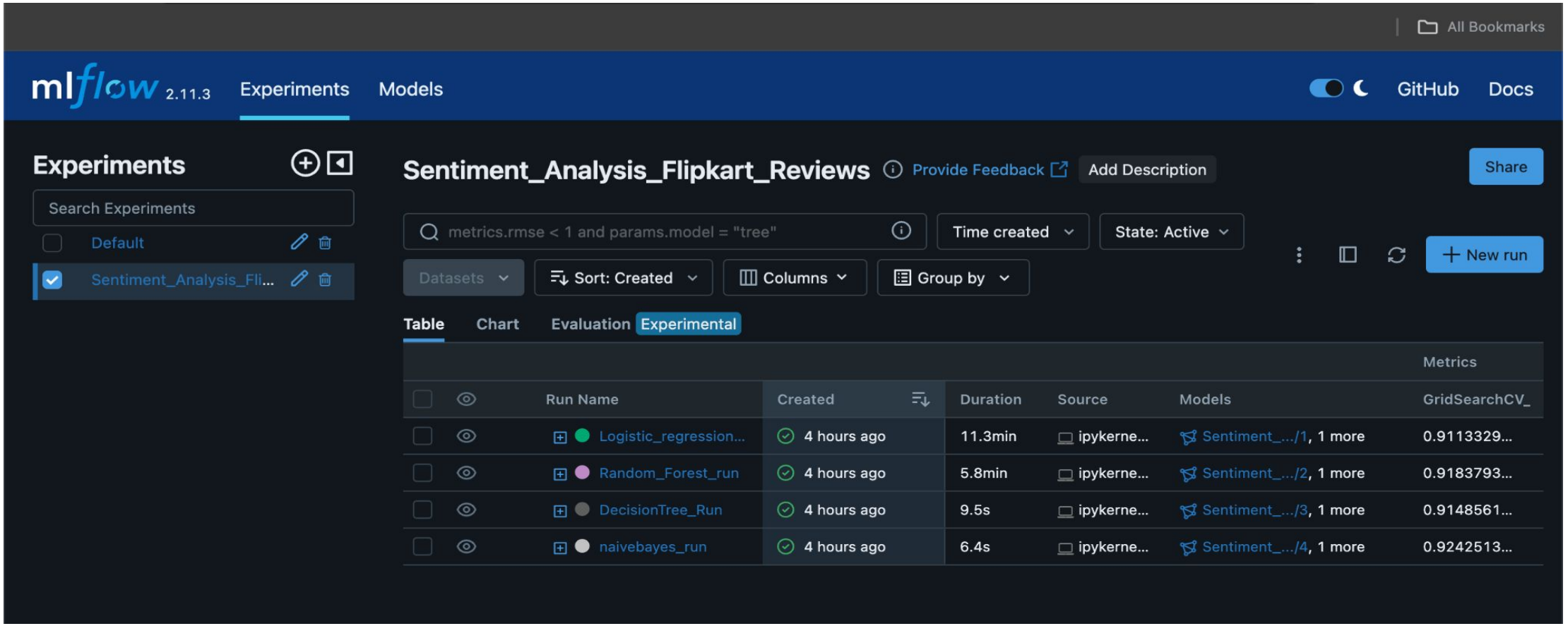
```
pip install mlflow
mlflow ui

import mlflow
mlflow.set_experiment("Sentiment_Analysis_Flipkart_Reviews")

mlflow.sklearn.autolog(max_tuning_runs=None)

with mlflow.start_run() as run:
    %time grid_search.fit(X_train, y_train)
```

MLflow dashboard:



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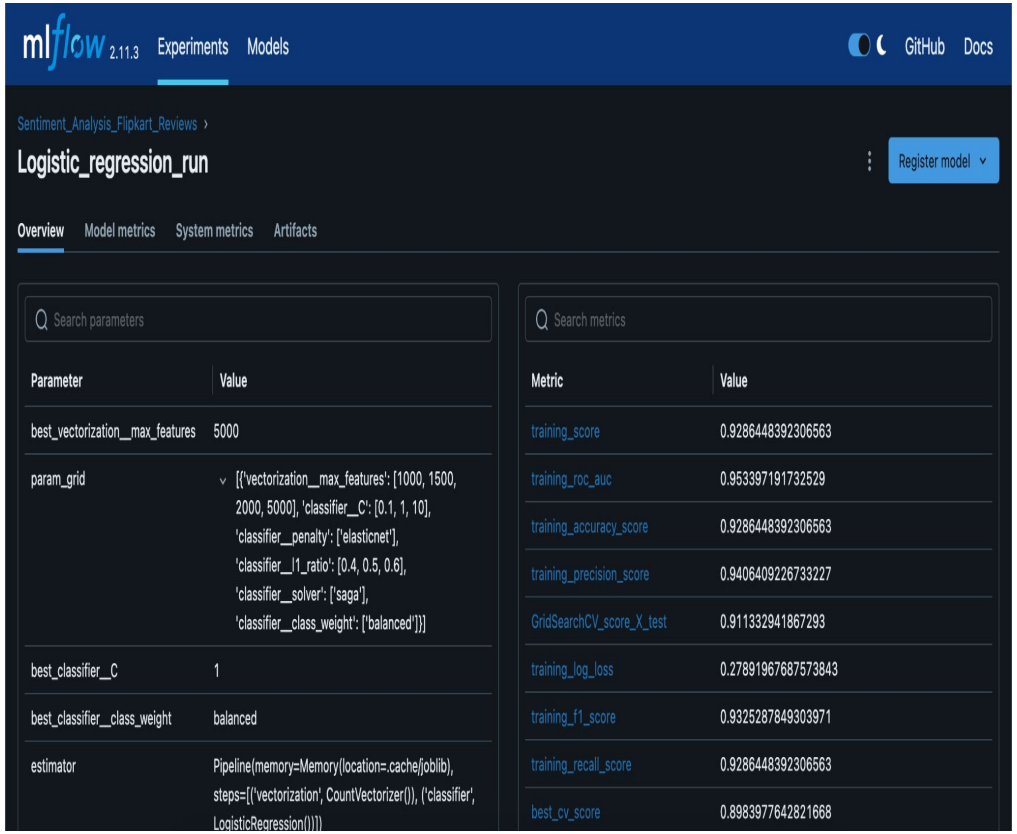
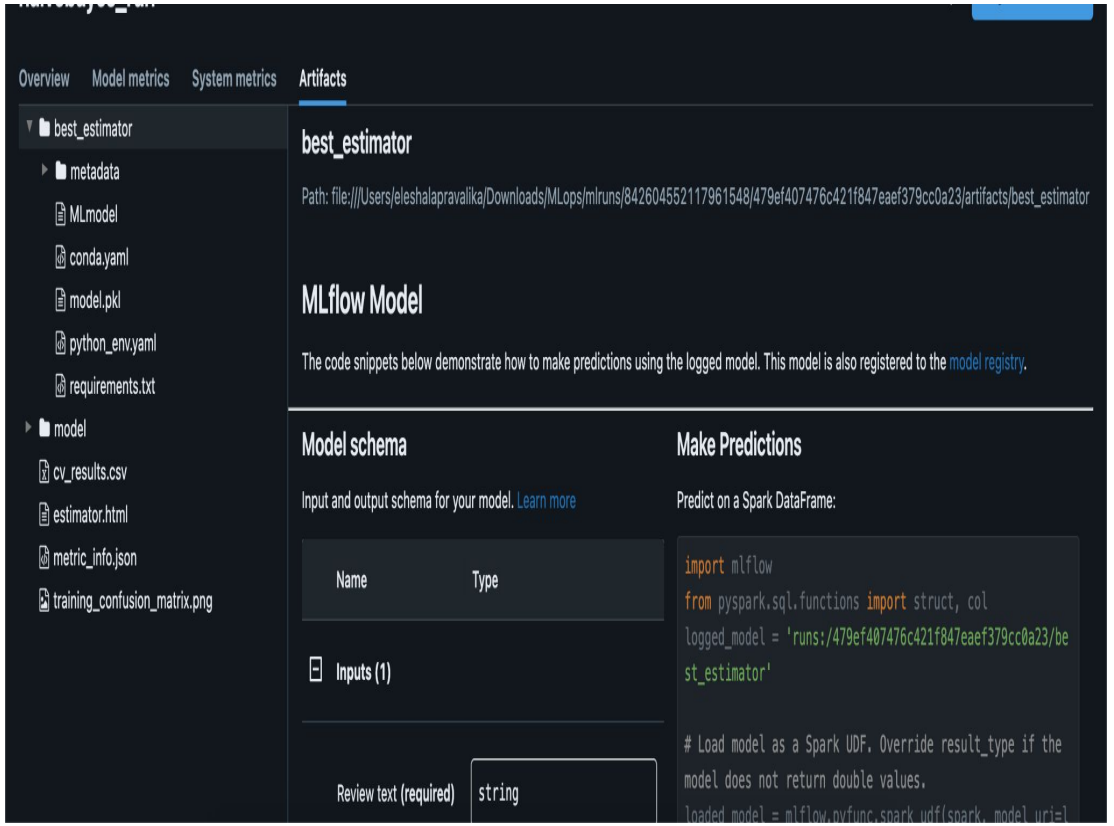
Demonstration of logging parameters, metrics, and artifacts using MLflow tracking APIs:





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Demonstration of logging parameters, metrics, and artifacts using MLflow tracking APIs:

Click on Experiment_name ⟶ Run name⟶ (scroll down for) ⟶ Parameters , Metrics, Artifacts.

Demonstration of logging parameters, metrics, and artifacts using MLflow tracking APIs:

Click on the attachment for video

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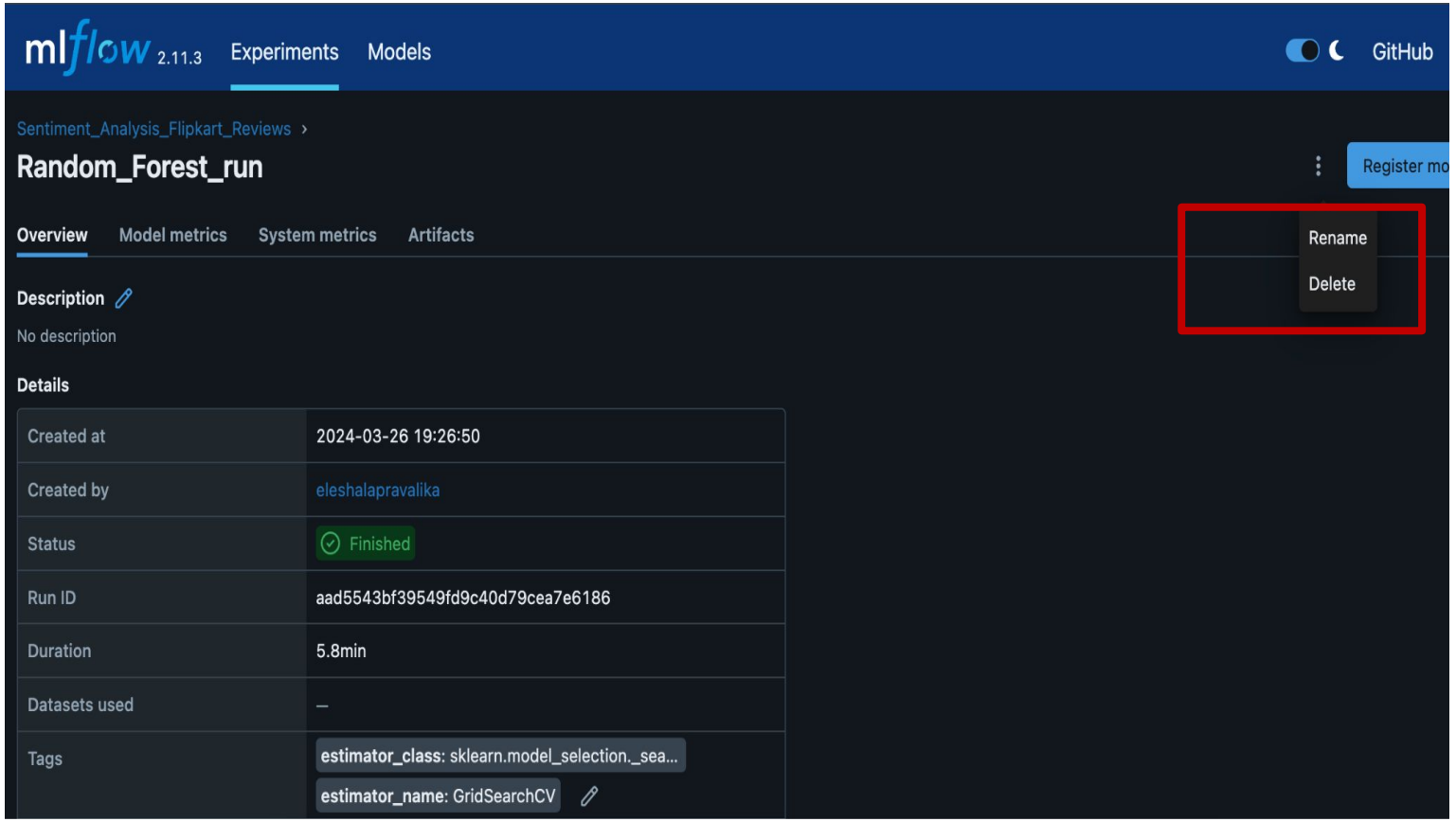
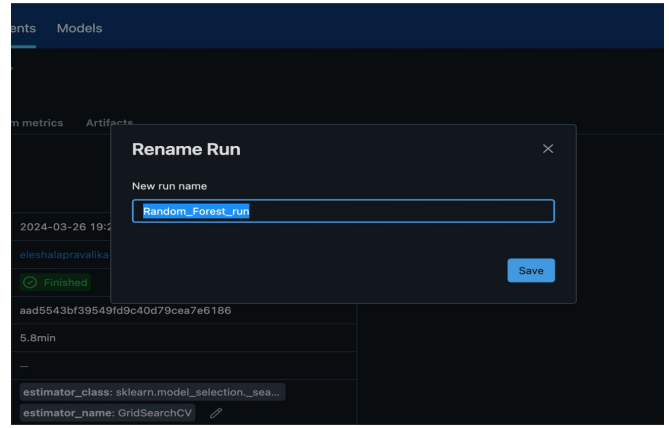
Customizing Mlflow UI with run names:





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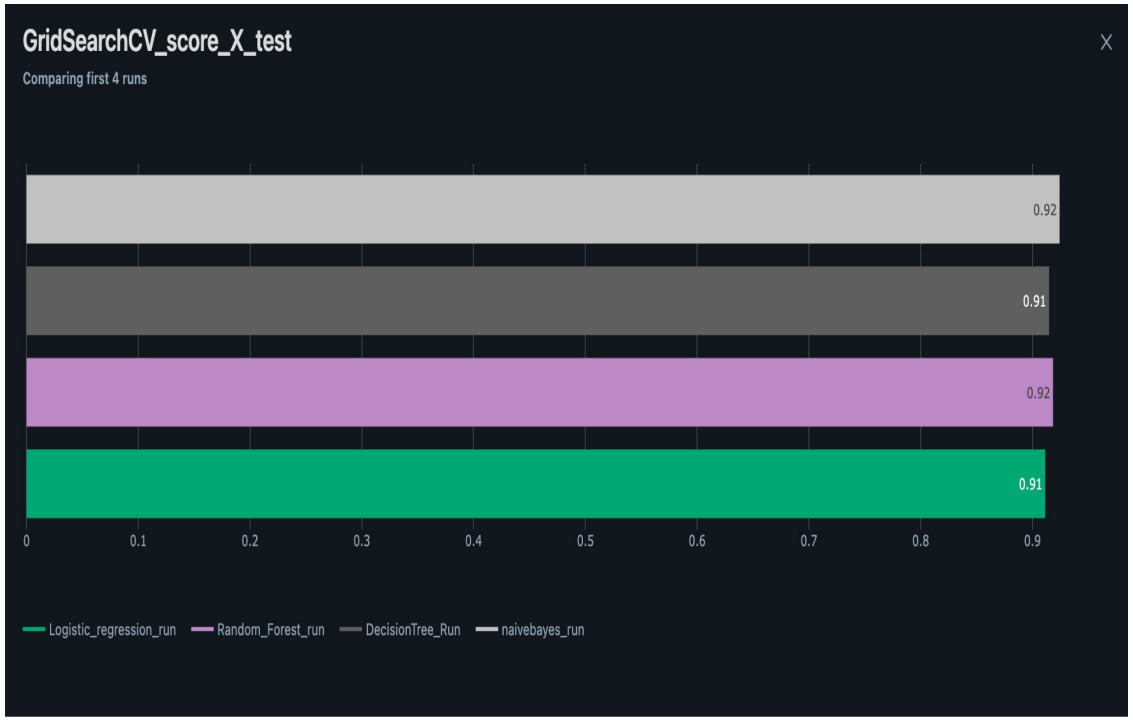
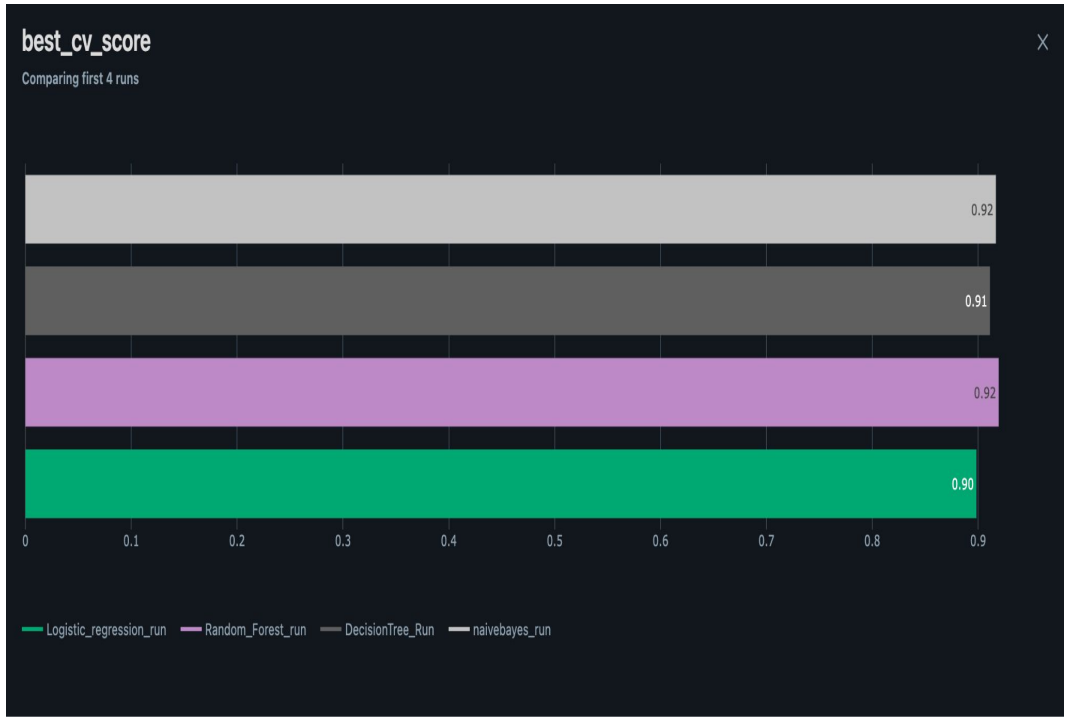
Customizing Mlflow UI with run names:

Click on Run name→Right corner : 3 dots→ Rename → Give the name for run→ Save.

Metric Plots :





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Metric Plots :

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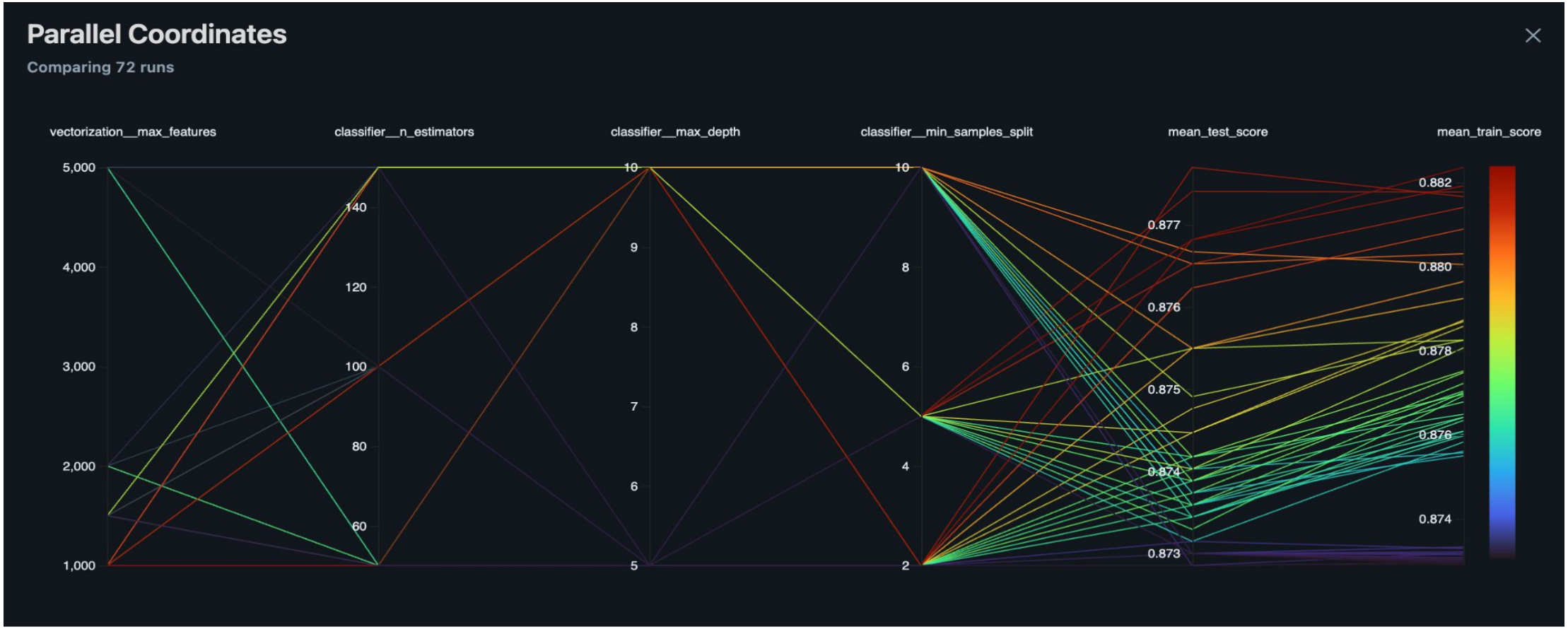
HyperParameter Plots Creation:

Click on charts⟶ Add Section ⟶ Name hyperparameter with model ⟶ Add Parallel coordinates chart ⟶ give parameters and metrics of particular run ⟶ click on the runname's "+" : This will pop the interactive chart

HyperParameter Plots :



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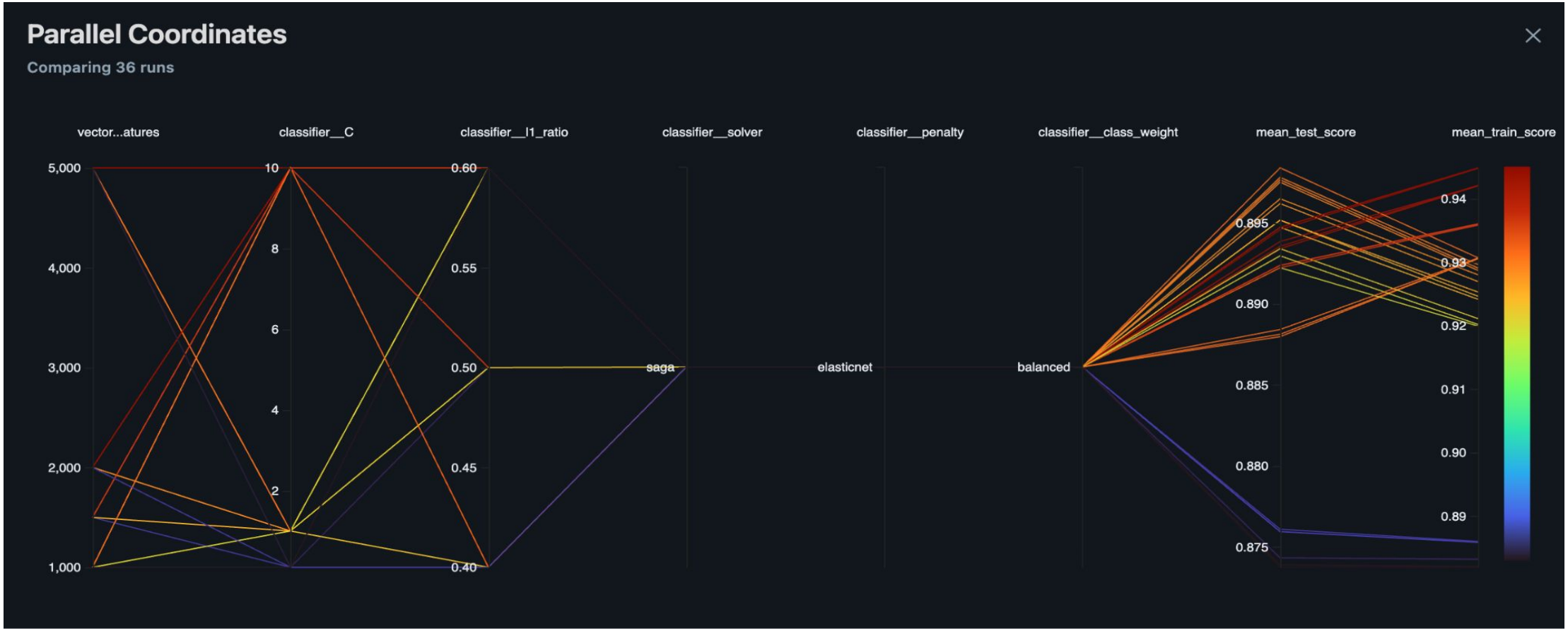
HyperParameter Plots :



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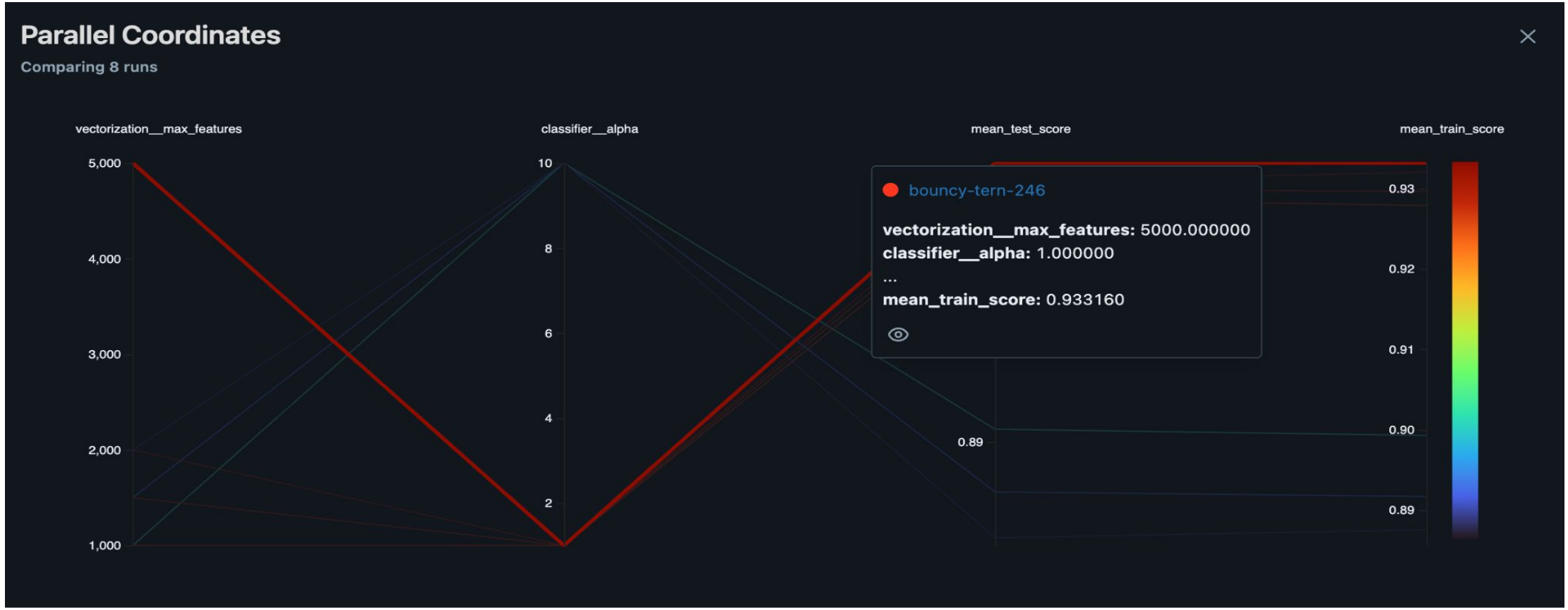
HyperParameter Plots :



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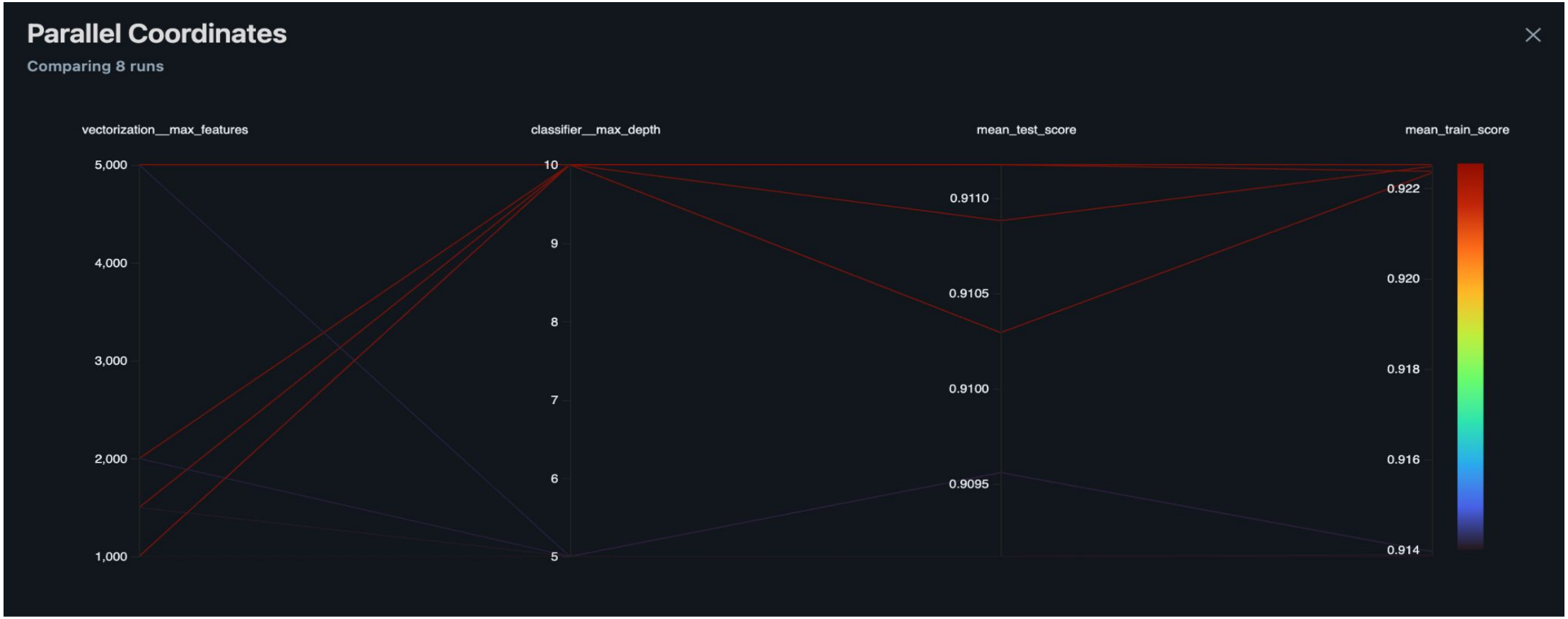
HyperParameter Plots :



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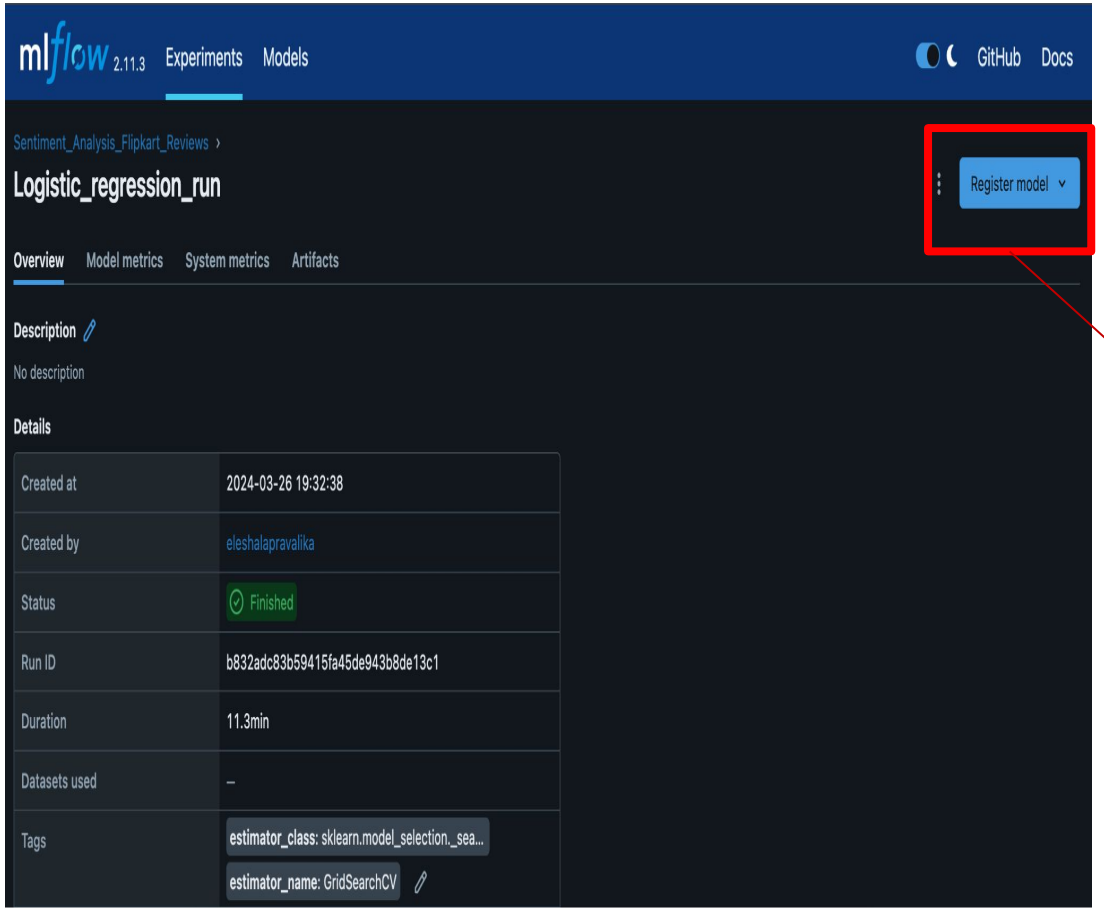
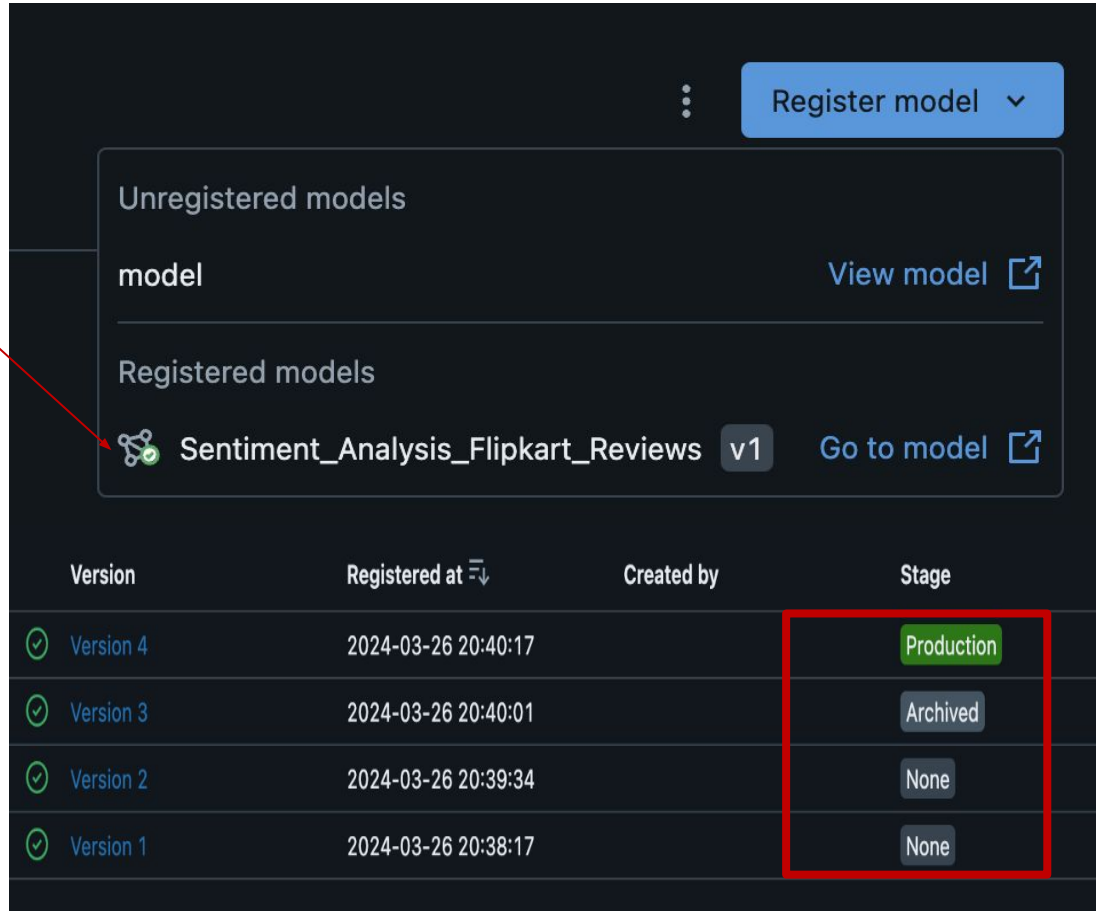
Registering models and Managing with tags:





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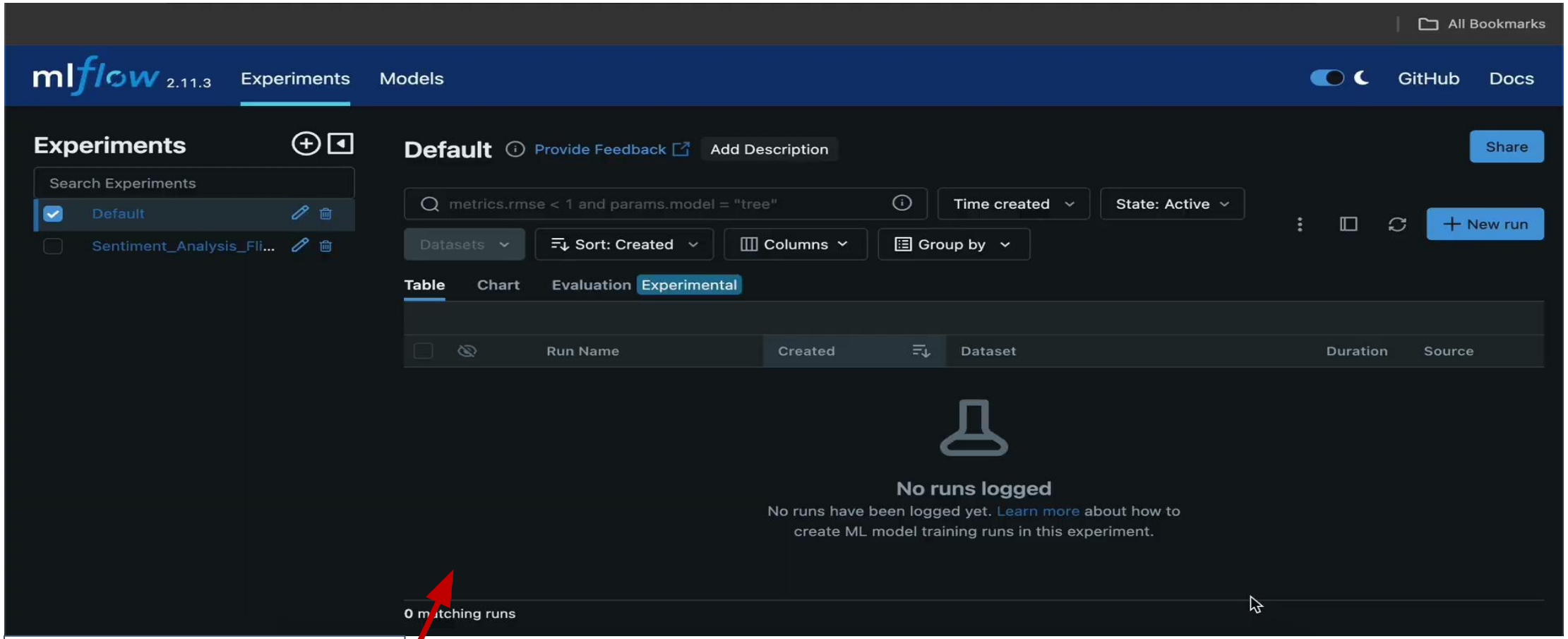
MLflow Experiment Tracking and Model Management



Click on the attachment for video

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THANK YOU

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