Pando2 CO2 Prediction Pipeline - Usage Guide

This guide explains how to use the different scripts in this project to launch, test, and manage the MLOps pipeline.

1. Launching the MLOps Pipeline

The main entry point for creating and running the entire pipeline.

Script: `launch_pipeline.py`

Purpose:

Defines all the steps of the SageMaker Pipeline (Data Prep, HPO Tuning, Training, Evaluation, Registration, Deployment) and starts an execution.

How to Run:

Ensure you are in a SageMaker environment (like a Studio Notebook) with the correct execution role configured.

```
python launch_pipeline.py
```

2. Testing the Deployed Endpoint

After the pipeline has successfully completed, use this script to send a test prediction request to the live endpoint.

Script: `test_endpoint.py`

Purpose:

Verifies that the model endpoint is active and can return predictions.

How to Run:

```
python test_endpoint.py
```

What it Does:

3. Exploring HPO Strategies (Optional)

This script is for experimentation and allows you to compare different hyperparameter optimization strategies.

Script: `hpo_strategies_example.py`

Purpose:
Launch standalone Hyperparameter Tuning jobs using different strategies (Bayesian, Random, Hyperband) to see which performs best for this model. This is useful for research before finalizing the pipeline's tuning step.

How to Run:
You can uncomment the desired strategy in the script and run it from a SageMaker environment.