Operationalizing Machine Learning

Machine Learning Ops Principles

CRITERIA	MEETS SPECIFICATIONS
Create detailed documentation in their repository's `README.md` file.	A README file is included in the project root and has: • An overview of the project • An Architectural Diagram • A short description of how to improve the project in the future • Screenshots required with a short description to demonstrate key steps • A link to the screencast video on YouTube (or a similar alternative streaming service)

Create a professional, portfolio-ready demo of deploying a ML model.	The screencast should meet the following criteria: • Screencast is 1-5 minutes in length • Audio is clear and understandable • Video is 1080P or higher with 16:9 aspect ratio • text is readable The screencast shows the entire process of the working ML application, including a demonstration of: • Working deployed ML model endpoint. • Deployed Pipeline • Available AutoML Model • Successful API requests to the endpoint with a JSON payload

Deploy model in Azure ML Studio

CRITERIA	MEETS SPECIFICATIONS
Create a new AutoML run	The submission includes screenshots of: • "Registered Datasets" in ML Studio shows "Bankmarketing" dataset available • The experiment is shown as completed.

Deploy a model and consume a model endpoint via an HTTP API	The submission includes screenshots of: • Endpoints section in Azure ML Studio, showing that "Application Insights enabled" says "true". • Logging is enabled by running the provided `logs.py` script • Swagger runs on localhost showing the HTTP API methods and responses for the model • `endpoint.py` script runs against the API producing JSON output from the model. • Apache Benchmark (ab) runs against the HTTP API using authentication keys to retrieve performance results. (optional)

Publish an ML Pipeline

CRITERIA	MEETS SPECIFICATIONS
Create and publish a pipeline	The submission includes screenshots of: • The pipeline section of Azure ML studio, showing that the pipeline has been created • The Bankmarketing dataset with the AutoML module • The "Published Pipeline overview", showing a REST endpoint and a status of ACTIVE

Configure a pipeline with the Python SDK	• A screenshot of the Jupyter Notebook is included in the submission showing the "Use RunDetails Widget" with the step runs
Use a REST endpoint to interact with a Pipeline	The submission includes screenshots of: • ML studio showing the pipeline endpoint as Active • ML studio showing the scheduled run

Suggestions to Make Your Project Stand Out!

1. Complete the optional items about load-test the endpoint.
2. Use a Parallel Run Step in a pipeline. Reference: https://docs.microsoft.com/en-us/azure/machine-learning/how-to-use-parallel-run-step
3. Test a local container with a downloaded model. Reference: https://docs.microsoft.com/en-us/azure/machine-learning/how-to-deploy-package-models
4. Export your model to support ONNX. Reference: https://docs.microsoft.com/en-us/azure/machine-learning/concept-onnx