

Model Performance Monitoring with Weights & Biases

The image displays two sequential screenshots of a Google Colab notebook titled 'Untitled1.ipynb'. The interface includes a file explorer on the left, a command prompt at the top, and a code editor with output cells.

Top Screenshot: The first code cell, labeled [2] ✓ 4s, contains the following Python code for imports and version checks:

```
# Imports and quick version check
import sys
import sklearn
import pandas as pd
import wandb

print('Python:', sys.version.splitlines()[0])
print('scikit-learn:', sklearn.__version__)
print('pandas:', pd.__version__)
print('wandb import ok')
```

The output shows the Python version (3.12.12), scikit-learn (1.6.1), pandas (2.2.2), and confirms 'wandb import ok'. The second code cell, labeled [3] ✓ 31s, contains the following Python code for login and API key handling:

```
# Login to W&B (interactive). In Colab this will prompt for your API key.
import wandb
wandb.login()
print('If login succeeded, you will see your W&B username above.')
```

The output shows a warning about a syntax error in the local file path, followed by a successful login message from wandb, indicating the user is logged in as '142502019 (ir2023)'.

Bottom Screenshot: The first code cell, labeled [4] ✓ 2s, contains the following Python code for data loading and splitting:

```
from sklearn.datasets import load_iris
from sklearn.model_selection import train_test_split
from sklearn.ensemble import RandomForestClassifier
from sklearn.metrics import accuracy_score, classification_report, confusion_matrix
import numpy as np
import pandas as pd

# Load dataset
data = load_iris()
X = data['data']
y = data['target']
feature_names = data['feature_names']

# Train-test split
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.3, random_state=42)

print('Shapes: X_train', X_train.shape, 'X_test', X_test.shape)
```

The output shows the shapes of the training and testing data: 'Shapes: X_train (105, 4) X_test (45, 4)'. The second code cell, labeled [5] ✓ 0s, contains the following Python code for plotting the confusion matrix:

```
import matplotlib.pyplot as plt
import io
from PIL import Image

def plot_confusion_matrix(cm, labels):
    fig, ax = plt.subplots(figsize=(4,4))
    ax.imshow(cm, interpolation='nearest')
    ax.set_title('Confusion matrix')
    ax.set_xticks(range(len(labels)))
    ax.set_yticks(range(len(labels)))
    ax.set_xticklabels(labels, rotation=45)
```

[12]
✓ 2s

```
# Baseline run
baseline_acc,run = train_and_log('baseline-run', n_estimators=50, random_state=42)
run.finish()
baseline_acc
```

Run summary:

accuracy	1
class_0_f1	1
class_0_precision	1
class_0_recall	1
class_1_f1	1
class_1_precision	1
class_1_recall	1
class_2_f1	1
class_2_precision	1
class_2_recall	1

View run **baseline-run** at: <https://wandb.ai/ir2023/mlops-performance-monitoring/runs/hpgid05z>
View project at: <https://wandb.ai/ir2023/mlops-performance-monitoring>
Synced 5 W&B file(s), 1 media file(s), 0 artifact file(s) and 0 other file(s)
Find logs at: [./wandb/run-20251028_043919-hpgid05z/logs](#)
Tracking run with wandb version 0.22.2
Run data is saved locally in [/content/wandb/run-20251028_044213-oak8elts](#)
Syncing run **baseline-run** to [Weights & Biases \(docs\)](#)
View project at <https://wandb.ai/ir2023/mlops-performance-monitoring>
View run at <https://wandb.ai/ir2023/mlops-performance-monitoring/runs/oak8elts>
Run baseline-run logged. Accuracy = 1.0000

[13]
✓ 4s

```
# Drifted run (simulate data shift)
drifted_acc,run = train_and_log('drifted-run', n_estimators=50, random_state=99, simulate_shift=True)
run.finish()
drifted_acc
```

Tracking run with wandb version 0.22.2
Run data is saved locally in [/content/wandb/run-20251028_044307-xtpj6mst](#)
Syncing run **drifted-run** to [Weights & Biases \(docs\)](#)
View project at <https://wandb.ai/ir2023/mlops-performance-monitoring>
View run at <https://wandb.ai/ir2023/mlops-performance-monitoring/runs/xtpj6mst>
Run drifted-run logged. Accuracy = 0.6222

Run summary:

accuracy	0.62222
class_0_f1	0.73333
class_0_precision	1
class_0_recall	0.57895
class_1_f1	0.32
class_1_precision	0.33333
class_1_recall	0.30769
class_2_f1	0.74286
class_2_precision	0.59091
class_2_recall	1

View run **drifted-run** at: <https://wandb.ai/ir2023/mlops-performance-monitoring/runs/xtpj6mst>
View project at: <https://wandb.ai/ir2023/mlops-performance-monitoring>
Synced 5 W&B file(s), 1 media file(s), 0 artifact file(s) and 0 other file(s)
Find logs at: [./wandb/run-20251028_044307-xtpj6mst/logs](#)
0.6222222222222222

```
[14]
✓ 4s

# This cell demonstrates programmatic alerting. Replace threshold as appropriate.
drifted_acc, run = train_and_log('drifted-run', simulate_shift=True)
threshold = 0.85
if drifted_acc < threshold:
    wandb.alert(title='Low accuracy detected', text=f'Accuracy {drifted_acc:.3f} below threshold {threshold}', level=wandb.AlertLevel.WARN)
    print('Alert sent (check W&B)')
else:
    print('Accuracy OK')

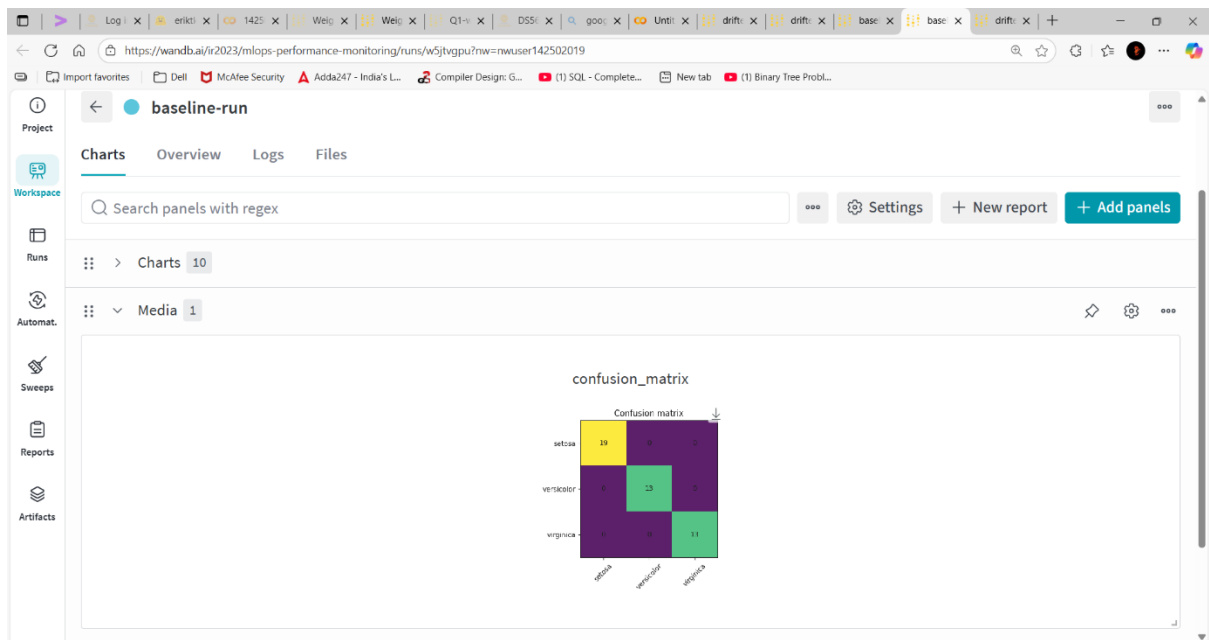
run.finish()
```

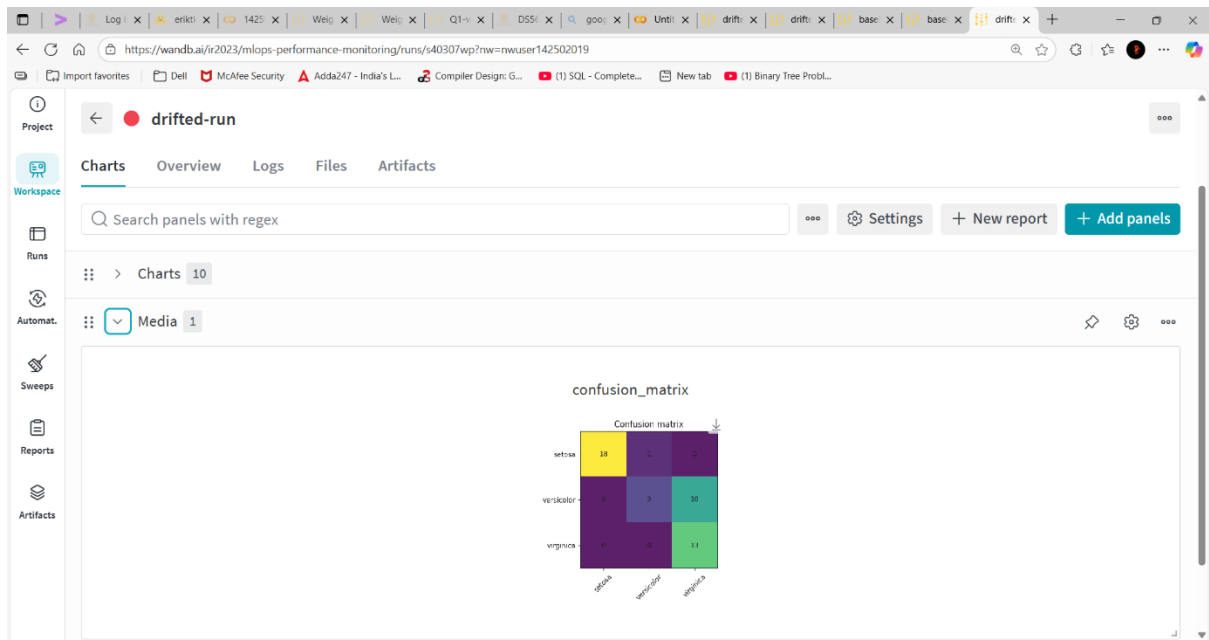
Tracking run with wandb version 0.22.2
 Run data is saved locally in /content/wandb/run-20251028_044409-s40307wp
 Syncing run **drifted-run** to [Weights & Biases \(docs\)](#)
 View project at <https://wandb.ai/ir2023/mlops-performance-monitoring>
 View run at <https://wandb.ai/ir2023/mlops-performance-monitoring/runs/s40307wp>
 Run drifted-run logged. Accuracy = 0.7556
 Alert sent (check W&B)

Run summary:

```
accuracy      0.75556
class_0_f1    0.97297
class_0_precision 1
class_0_recall 0.94737
class_1_f1    0.35294
class_1_precision 0.75
class_1_recall 0.23077
class_2_f1    0.72222
class_2_precision 0.56522
class_2_recall 1
```

View run **drifted-run** at: <https://wandb.ai/ir2023/mlops-performance-monitoring/runs/s40307wp>
 View project at: <https://wandb.ai/ir2023/mlops-performance-monitoring>
 Synced 5 W&B file(s), 1 media file(s), 0 artifact file(s) and 0 other file(s)
 Find logs at: ./wandb/run-20251028_044409-s40307wp/logs





ir2023 > Projects > mlops-performance-moni... > Runs > drifted-run

142502019's workspace Personal workspace

Project **drifted-run**

Workspace

Charts Overview **Logs** Files Artifacts

Timestamps visible Search

- 2025-10-28 04:44:12 Run drifted-run logged. Accuracy = 0.7556
- 2025-10-28 04:44:13 Alert sent (check W&B)

[W&B Alert] Low accuracy detected -- drifted-run



Low accuracy detected



Accuracy 0.756 below threshold 0.85

[Dashboard](#)

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