

An introduction to Model Drift

with

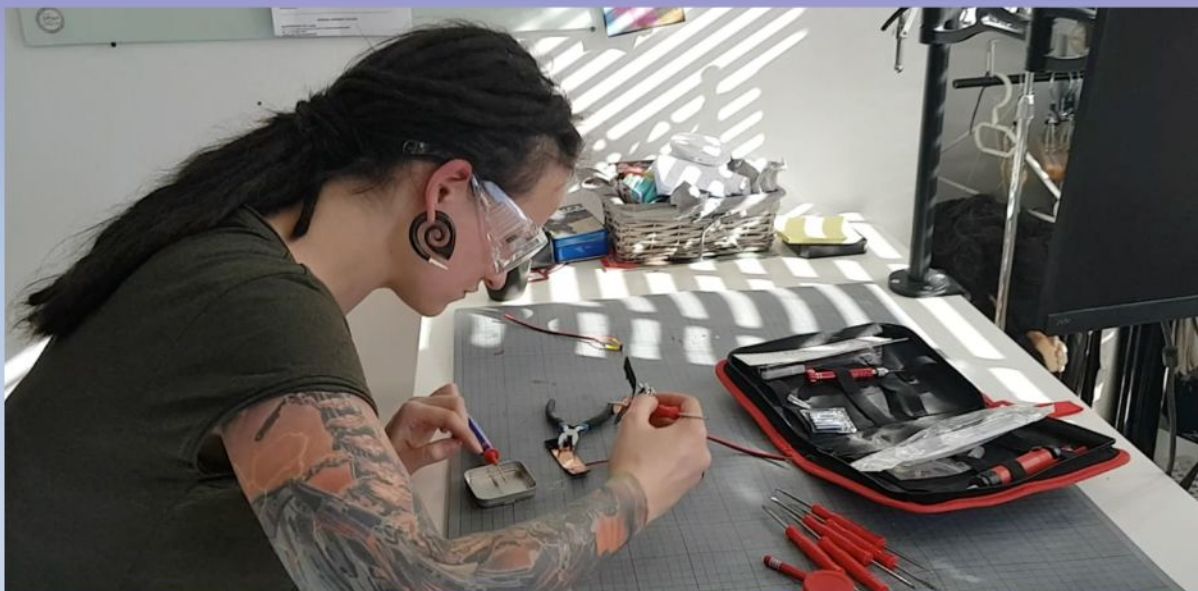


Alyona Galyeva

PyLadies Amsterdam workshop - 21.12.2022

Agenda

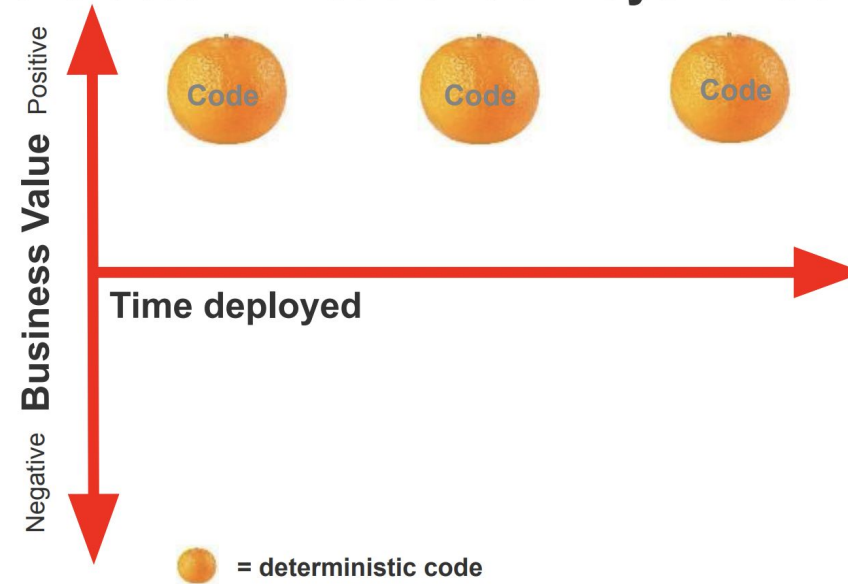
- Intro and workshop setup
- Model performance
- Handling the drift
- Test-based monitoring
- Closing remarks



Workshop setup

Clone [GitHub Repo](#) and follow README.md instructions

Code is deterministic and always runs as written



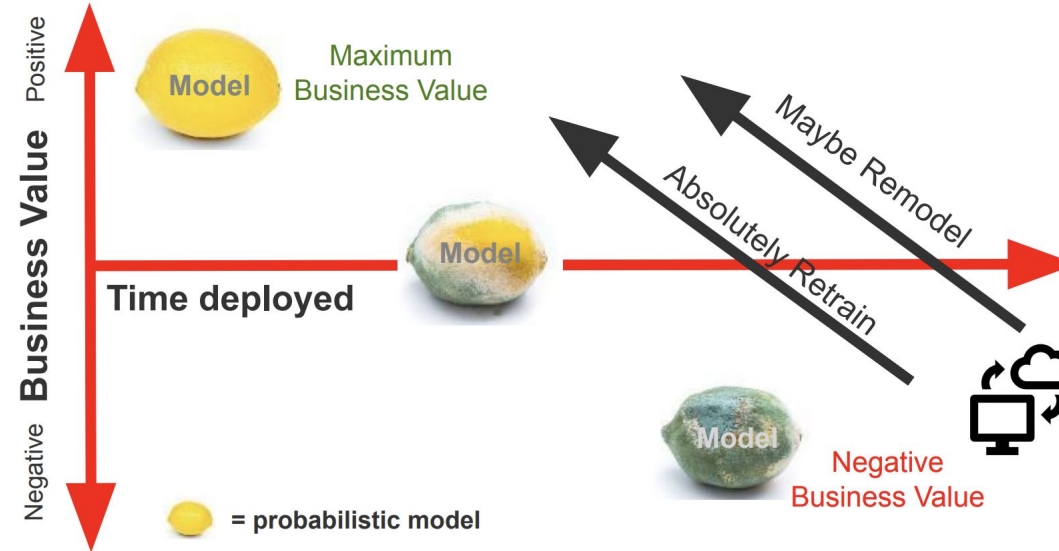
Traditional software

Software performance

Usually a DevOps team monitors and maintains the system in production.

<https://neptune.ai/blog/how-to-monitor-your-models-in-production-guide>

ML models must be monitored, retrained, and often remodeled.



AI Software

Model performance

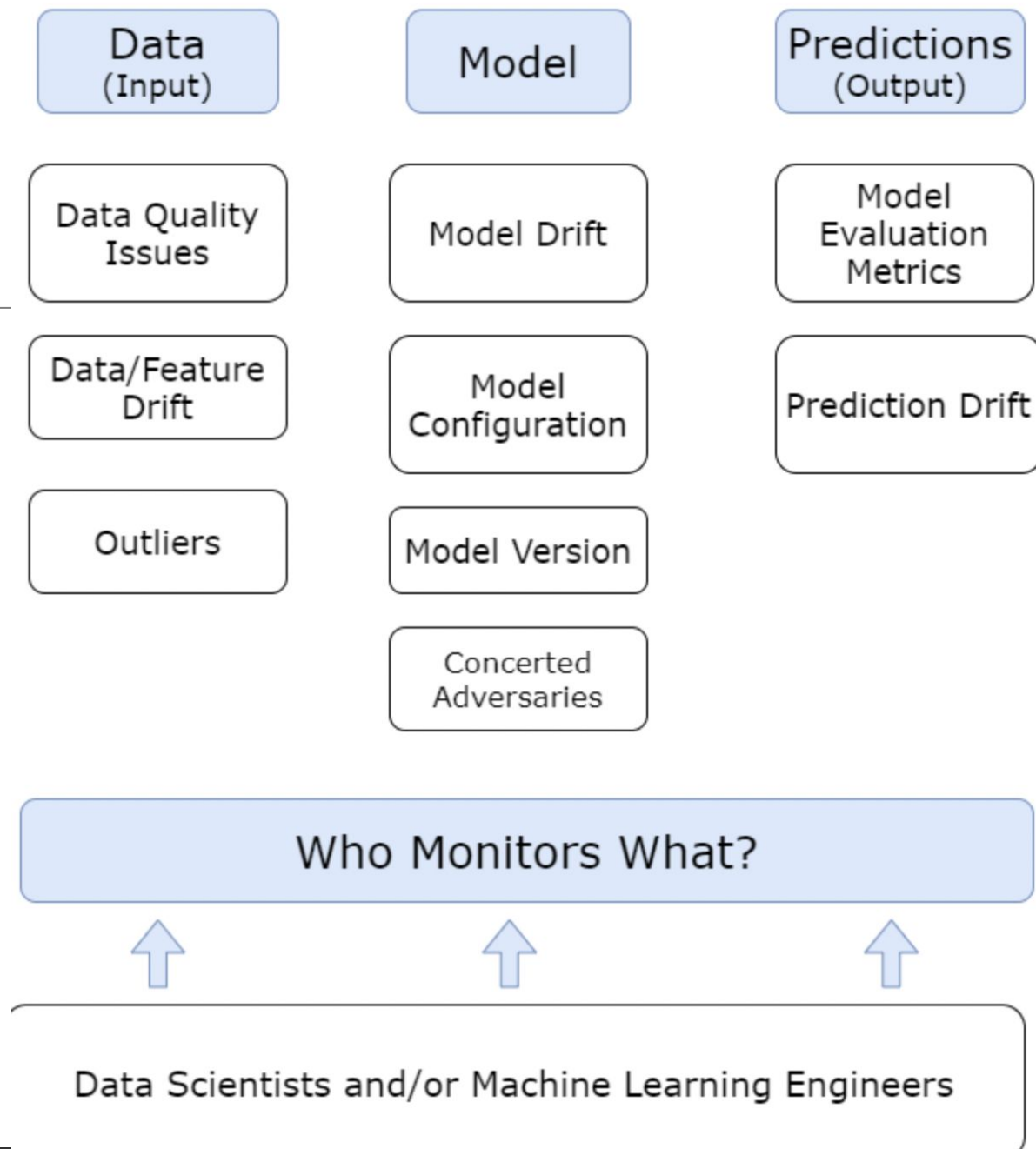
Machine learning models degrade over time as they are sensitive to changes in the real world.

<https://neptune.ai/blog/how-to-monitor-your-models-in-production-guide>

Why model monitoring is hard?

In your case monitoring and maintenance has to be a shared responsibility.

<https://neptune.ai/blog/how-to-monitor-your-models-in-production-guide>



What is Evidently?

Evidently is an open-source Python library for data scientists and ML engineers.

It helps evaluate, test, and monitor the performance of ML models from validation to production.

Tests:

Batch model checks

Reports:

Interactive dashboards

Real-time

ML monitoring

(early dev)

Different types of drift

Data drift (input)

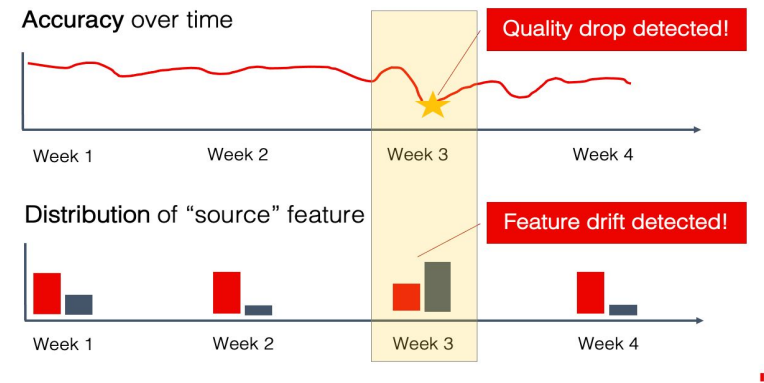
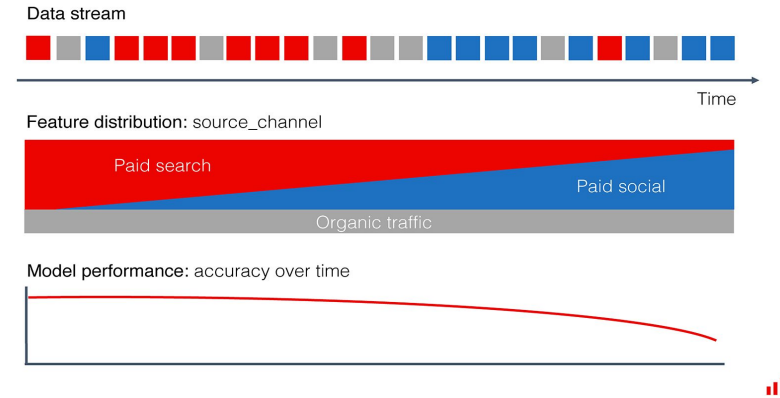
Describes how the (training) data changes over time for the model.

Model drift (in between)

A model's performance might change over time. It can be caused by target drift, data drift, or simply a bug in the model's code.

Target drift (output)

Describes how the target variable changes.



Test-based monitoring

Test-based monitoring in Evidently performs tests with a clear **pass** or **fail** result against predefined expectations.

This can be useful when

- You want to **send an alert** when there is a significant difference in the production data
- When the model's **performance suddenly deteriorates**
- **Logging and monitoring** of performance



Image sources: Evidently.ai

Closing remarks

Interested in integrating Evidently with Grafana, Airflow, MLflow, Metaflow?

Interested in contributing to Evidently? Follow [these guidelines](#)



```
if questions:
    try:
        answer()
    except RuntimeError:
        pass
else:
    print("Thank You.")
```