Principles of AI Engineering

Exercise 9

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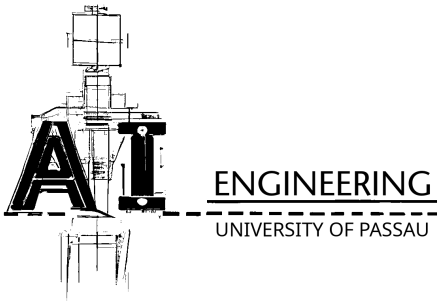

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Project task

Prometheus and Grafana are commonly used to monitor metrics of various kinds. Implement a metrics endpoint using the Prometheus client for Python.[1] Add at least the following metrics:

- Accuracy (updated after every correction)
- Average prediction confidence
- Number of predictions per category
- Number of correct predictions per category
- Number of incorrect predictions per category

A tutorial to get started with the Prometheus client in Python is available in the official documentation[2].

Monitoring the data produced by the metrics endpoint requires the setup of a Prometheus server and a Grafana instance. One way to create such a setup is docker-compose. You can find a reference for such a setup here[3]. If you cannot run docker due to hardware limitations, contact the TA as soon as possible.

Questions

1. Describe how you would design human oversight for the described system, consider the consequences of mistakes, possibilities of reviewing model decisions and telemetry.
2. Given the problem description, describe what could be a non-ML alternative to solve the problem. Describe what would change in the system if it would be solved without machine learning.

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[1] `https://github.com/prometheus/client_python`

[2] `https://prometheus.github.io/client_python/`

[3] `https://git.fim.uni-passau.de/aie/excercises/principles-of-ai-engineering/monitoring-setup`