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Task 3: Automating a Machine Learning Pipeline

In this task, you will gain a basic understanding of machine learning workflow automation. To do this, you will create a pipeline that automates your machine learning process from data preparation to evaluation. You can use your previous solutions (CNN, RNN) or choose a new implementation. The goal is to ensure the reproducibility of the training processes and increase efficiency through automation.

1st **designing an ML pipeline**

- O Explain the concept of a machine learning pipeline: Which steps are important and how are they related?
- O Provide an overview of the planned steps in your pipeline (e.g. data preparation, model training, evaluation).

2nd **technology stack and tools**

- O Choose appropriate tools and technologies to automate your pipeline (e.g. GitHub Actions, Jenkins, Apache Airflow).

3. **pipeline automation**

- O Create a pipeline that automates your machine learning process.
- O Implement data preparation, model training, and evaluation steps in your pipeline.

4th **evaluation and monitoring**

- O Evaluate how your automated pipeline works: What are the benefits and what were the challenges?

5th **visualization of the results**

- O Visualize the key results of your pipeline, such as training results or comparison of prediction values.
- O Document the steps of automation and the impact on model performance.