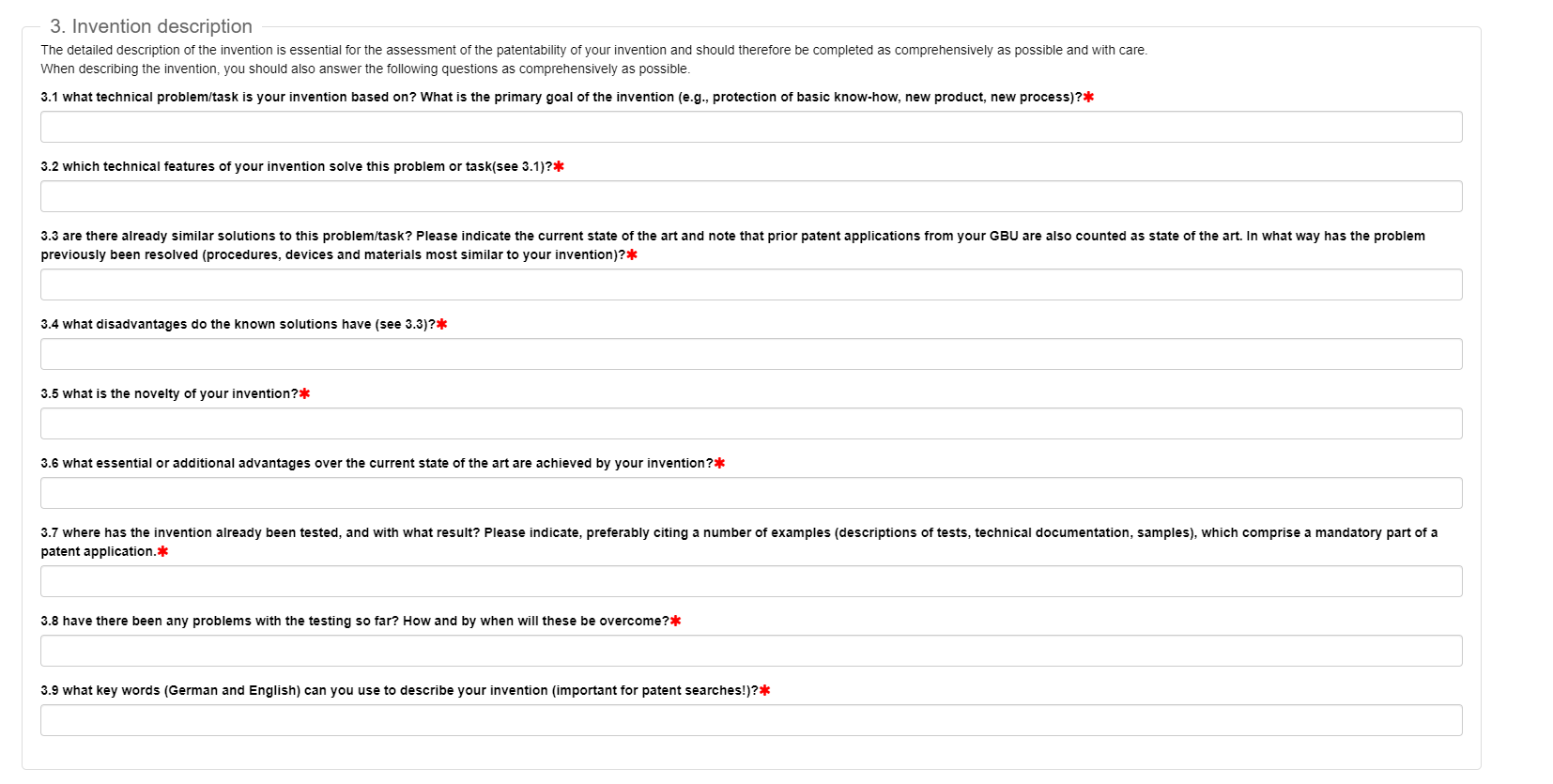
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| Title: Platform Aided Architecture for Machine Learning Operations (MLOps) for Engineering applications |

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3.1 What technical problem/task is your invention base on? What is the primary goal of the invention (e.g., protection of basic know-how, new product, new process)?

1. The Invention is based on the technical problem of scaling machine learning/Deep Learning/AI in an industrial setting.
2. The primary goal of the Invention is to develop MLOps frameworks and architecture to facilitate and scale the machine learning/Deep Learning/AI lifecycle in an industrial setting while also ensuring the reproducibility and traceability of machine learning projects.
3. Moreover, it aims to identify the challenges facing the Deployment of AI models in production

Major Technical challenges,

1. Raw Data collection and Processing
2. Labelling of Data
3. Data versioning and maintaining traceability
4. Handling data size in the Model development and deployment process
   1. Which technical features of your invention solve this problem or task?

The technical features that are proposed in this invention to solve the challenges of scaling ML/DL/AI Model in an industrial setting include:

* Integrating S3 bucket as a data storage unit
* Implementing data versioning with DVC
* Implementing model versioning with Harting-Mlflow
* Automating the entire machine learning lifecycle
* Building a MLOps framework for managing the entire machine learning lifecycle
* Deploying models with Ray Serve(Pending)

3.3 Are there already similar solutions to this problem or task? Please indicate the current state of the art and note that prior art and note that prior patent application from your GBU is also counted as the art. In what way has the problem previously been resolved (procedure, devices, and materials most similar to your invention)?

Search for similar patents / Reference papers etc.

3.4 What disadvantages do the known solutions have?

Gaps in the identified State of the Art

**ADD Your idea in details with all the Flow diagram and block diagram explaining the technical details**

3.5 What is the novelty of your invention?

Explain briefly your idea and how do you overcome identified technical disadvantages mentioned previously

The novelty of the invention lies in the development of a comprehensive MLOps framework for scaling machine learning in an industrial setting. The framework proposed leverages DevOps practices while also introducing ML-specific practices such as data labelling, data versioning and model monitoring to ensure reproducibility and traceability of ML projects. Moreover, the framework proposed in the invention acts as a template for individuals and teams to build their own MLOps frameworks.

3.6 What essential or additional advantages over the current state of the art are archived by your invention?

Advantages or the benefits of your idea

3.7 Where has the invention already tested, and with what results? Please indicate, preferably citing a number of examples (descriptions of test, technical documentations, samples), which comprise a mandatory part of patent application.

3.8 Have there been any problems with the testing so far? How and by when will these be overcome?

3.9 What keywords (German and English) can you use to describe your invention (important for patent search)?

English Keywords:

* MLOps
* Machine Learning
* Industrial Setting
* DevOps
* Data Versioning
* ML Lifecycle
* Reproducibility
* Traceability
* Model Monitoring

Graphical user interface, text, application, email

Description automatically generated

5.1 What application will this invention be used for? Which customer benefit occurs?

Main application of this text is to provide a framework and best practices for implementing MLOps in an industrial setting. By using MLOps to automate the entire machine learning lifecycle/Deep learning/Model Building and implementing various tools like DVC for data versioning, MLflow Tracking, teams can make the machine learning development and deployment process more efficient, reproducible, and scalable.

Customer benefit that occurs from implementing MLOps will help in gaining insights from data to inform better decision-making, and optimizing the value of their services or business. By having reproducible and traceable experiments, they can ensure more accurate and reliable results from these insights.

5.2 Have information, publications, deliveries or notifications been forwarded to third parties or is any of the above planned? Was an NDA completed beforehand

5.3 Other remarks or explanation regarding the invention

5.4 Please indicate the USP (Unique Selling Proposition) of your invention

The USP of this text is that it provides a comprehensive framework and best practices for implementing MLOps in an industrial setting, enabling advances in digital services within a organization by providing guidance on data versioning, model development and deployment, and implementing automated workflows, the framework enhances the reliability and reproducibility of experiments.

5.5 Describe your invention using a maximum of three sentences, such that it can be understood by anyone.

Framework for implementing MLOps practices in an industrial setting, enabling teams to automate the machine learning lifecycle, optimize the value of their products or services, and make better decision during model development and deployment

The framework provides automated pipeline on data versioning, model development and deployment, and using DevOps practices for a specific use case of AI models