Thesis Proposal - DevOps for Machine Learning | Fraunhofer IPT | RWTH Aachen

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Agenda

Introduction

Thesis Goals

Tasks

References

Introduction

- Regarding Fraunhofer IPT [1]
  - Fraunhofer Institute for Production Technology
  - Located in RWTH Aachen campus
  - Deals with - Applied R&D in the subjects of engineering and mechanical engineering
  - Provides - Integrated Solutions for Production
- Technology - Non-Isothermal Glass Molding [2]
  - Is a forming manufacturing process
  - Glass parts are produced in a single process step
  - No need for finishing operations
  - Suited for Mass Production

Thesis Goals

- Standardized Model Deployment process
- Faster time to Deployment by using automated methods in the process (where possible automated)
- Higher quality in Deployment and operation of models (Model Lifecycle)

Tasks

- Develop framework tailored to ML Ops in Production - can also be designed from other popular Ops frameworks
- Develop guideline through key ML Ops phases within the framework - code versioning and standards, saving data and model versions (model management), monitoring, continuous training and validation of performance etc.
- Integrate available tools and platforms to automate ML Ops steps - for continuous integration and continuous delivery (CI/CD) and continuous training (CT)
- Validate on use case from production - models are available but can also start from beginning - depending on availability of time

References

- “Fraunhofer IPT.” [Online]. Available: https://www.ipt.fraunhofer.de/en.html
- P.-A. Vogel and T. Grunwald, “Non-Isothermal Glass Molding.” [Online]. Available: https://www.ipt.fraunhofer.de/en/Competencies/processtechnology/Finemachiningandoptics/non-isothermal-glass-molding.html