Computer Vision Take Home Project

Objective

Evaluate the given dataset to determine if parts are good or bad. You have 4 days to complete the project.

Dataset

- https://github.com/stepanje/MPDD?tab=readme-ov-file
- Parts: Bracket (brown, white, black) and metal plate.
- You may choose one part or analyze multiple parts for additional exploration.
    - Do not choose connector or tubes
- Data structure:
    - Ground truth: Labeled data for validation
    - Training split: Images for model training
    - Test split: Images for evaluating model performance
    - Subfolders distinguish between good and bad parts

Requirements

1. Code Repository:
    - Create a github repo and push all code to it
    - Add ReadME.md to show how to run repo
2. Preprocessing
    - Implement any preprocessing techniques to prepare data for model training
3. Model Creation
    - Build and train models
4. Post Processing
    - Based on model results look at any post processing techniques to improve performance

Design and Submission

- You have the freedom to choose the model and pre/post processing techniques
    - Preferred approaches are with anomaly detection, but necessary
- Feel free to use multiple models to compare performance
- A link to the github repository and any accompany results/plots should be submitted
- Be prepared to discuss your take-home project in a follow-up meeting

Extra Note

- Please inform us if you have any questions
- We will assess code structure, model pipeline performance, and chosen techniques
- Even if project isn’t finished we can still review and go over repo with you