CERTIFICATE OF CONTRIBUTION

this is to certify that

Mr. Amruthraj Gudimalla

has successfully contributed to the following project at **Constructor Nexademy** in Munich as part of his study assignment from November 17, 2025, to December 12, 2025.
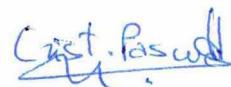
"Defect Detection Benchmark"

for our company

VSL (Switzerland) Ltd.
Wankdorfallee 5 – CH-3014 Bern

The project consisted in developing other models to benchmark existing VSL models for defect detection and classification. The students contributed by cleaning the image database, and providing annotation improvement suggestions, drawing on their interpretations after using tools such as EigenCAM and GradCAM or SAM for semi-automatic annotation. They also helped expand the defect database through augmentation and occlusion techniques. The models were benchmarked using various YOLO versions and evaluated across different datasets. In addition, the students tested models from the Detectron2 platform, specifically Mask R-CNN architectures with ResNet-50, ResNet-101, or ResNeXt-101 backbones. They also explored adding an initial classification layer using the EfficientNet V2 model to distinguish between damaged and non-damaged images.

We sincerely thank Mr. Gudimalla for his valuable contribution to the success of this project, and we wish him continued success in all his future academic and professional endeavors, and he is welcome to reach out to us at any time with questions or follow-up discussions.

Cristina Pascual Deocon
Data Scientist