

Mi-IndusData+

Enhanced Data Representation for Advanced Model Training

Synthetic images can be generated to create a more comprehensive and diverse training dataset, covering a wide range of defects and variations that may not be readily available in real-world data.



Technology Overview

Image synthesis techniques are now being employed to generate synthetic images representing various defects or anomalies. Synthetic images help create diverse and extensive training datasets, covering a wide range of possible defects and variations. These synthetic images are used to train AI models for automatic inspection, improving their ability to detect defects accurately and reliably. By incorporating image synthesis, inspection systems can achieve even greater accuracy, efficiency, and adaptability, leading to enhanced product quality and reduced manufacturing costs.

Technology Benefits

The main impact of IndusData+ are:

- The image generation feature addresses data scarcity by creating diverse and tailored datasets, enabling training for scenarios where real-world data is limited or hard to collect.
- By providing annotated synthetic images, the system allows for more effective training of machine learning models, improving their accuracy and robustness across various tasks.
- Automating both image generation and annotation significantly reduces the time and resources needed to create large, high-quality datasets compared to manual data collection and labeling.
- The ability to generate domain-specific data ensures that models are trained on relevant scenarios, increasing their applicability and reliability in real-world settings.
- By simulating uncommon or hard-to-capture scenarios, the system helps prepare AI models for edge cases, enhancing their robustness.

- Faster dataset preparation accelerates the overall AI development lifecycle, bringing solutions to production more quickly.

Key Features

IndusData+ provides following features:

- **Image Generation**
This feature enables the creation of realistic synthetic images tailored to specific scenarios, incorporating various parameters such as object placement, lighting, and defect simulation to meet diverse application needs
- **Image Annotation**
The annotation system automatically generates labels, bounding boxes for the synthetic images, streamlining dataset preparation and ensuring compatibility with machine learning workflows.
- **Third Party Image Generation Integration**
An interface is provided for third party system integration.

Applications

- Machinery & Metal, Food & Beverage, Electrical & Electronic Components

