



Supported by



Contribution ID: 5

Type: **not specified**

Machine Learning and Computer Vision in Industry 4.0: Use case 2

Friday, 12 April 2024 16:30 (1h 30m)

Syllabus outline:

Use pretrained Convolutional Neural Networks (CNNs) to classify inserts. Hands-on: 120 minutes.

Visualization of the structure of a CNN architecture.

Training and test data visualization.

Estimation of the class of independent examples using a pretrained model.

Objective competences:

1. To observe in practice the application of a CNN in image processing.
2. To identify the building blocks of a CNN architecture.
3. To learn to use pretrained CNNs to get descriptors to classify the level of wear of milling inserts.
 - 3.1. To get started with non-handcrafted descriptors.
 - 3.2. To apply this knowledge to an Industry 4.0 problem.

Intended learning outcomes:

To classify inserts as having high or low wear using features extracted using pre-trained CNNs.

To identify the parts of an image processing system.

To know how to evaluate the performance of a machine learning model.

Presenters: Mrs MARTÍNEZ MENDOZA, Alicia; Mr CAROFILIS VASCO, Roberto Andrés