WORKSHOP ON

APPLIED MACHINE LEARNING AND COMPUTER VISION FOR AUTOMATED ANALYSIS

Organized by
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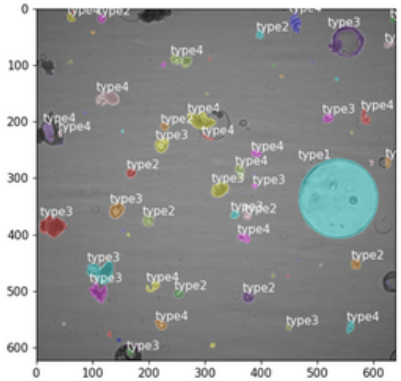
MSEE

MATERIALS SCIENCE IN EXTREME ENVIRONMENTS

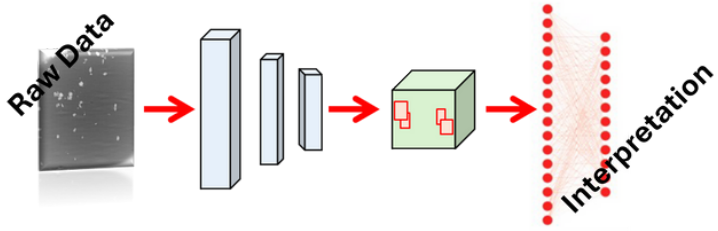
SEPT. 26-27, 2024

JOHNS HOPKINS HOMEWOOD CAMPUS



TOPICS: • Basic background into DNNs • Object detection • Segmentation • Classification • Introduction to generative AI

In recent years, methods based on Deep Convolutional Neural Networks (DCNNs) have shown impressive performance improvements for object detection and recognition problems. This has been made possible due to the availability of large annotated datasets, a better understanding of the non-linear mapping between input images and class labels as well as the affordability of GPUs. In this workshop, we will give an overview of various deep learning-based models and approaches relevant to automated analysis in MSEE research. While some of the fundamentals background into DCNNs will be introduced, the emphasis of this workshop will be on the application of these tools to MSEE relevant problems.



DAY 1

Lecture 1: Introduction to DCNNs
Lecture 2: Object detection
Lecture 3: Object segmentation

DAY 2

Lecture 4: Generative AI
Lecture 5: Image restoration
Lecture 6: Latest applications in AI

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