Convolutional Neural Networks and Image Processing

Course code: MLC_CNIP

Our workshop is for people who are looking for hands-on experience with deep neural networks for image processing, but they didn't have any real opportunity to do so yet. Through experiments, we will explore how and why such models work, the intuition behind its functionality, and gradually, through simple examples, we will come to the models commonly used in industry. We will focus on possible use cases for neural net's internal semantic image representation and how to visualize neural net behavior in the most effective way.

Who is the course for

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but they didn't have any real opportunity to do so yet.

Required skills
- basic knowledge of programing in Python
- high school level of mathematics
- Basics of machine learning on the level of our course Introduction to machine Learning

Course outline
- VGG 16 and ResNet
- Transfer learning and fine-tuning
- Image classification
- Batch normalization and data augmentation
- U-net and Image segmentation
- GANs and superresolution
- Neural network explainability
- Adversarial patch

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