



Medical Imaging meets Deep Learning

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Dense correspondence estimation with deep learning and cross-dataset generalization

Convolutional encoder-decoder architectures with skip connections, such as FCN, U-Net, or FlowNet, have become the working horse of contemporary computer vision and image analysis. There are hardly any tasks that cannot be formulated by a variant of this network architecture. I will introduce the network architecture in tutorial style in the context of segmentation and optical flow estimation, and will show its conceptual differences to a patch-based approach. The second part of the talk will take the emphasis from the architecture and shifts it to the data. I will highlight the importance of cross-dataset generalization and typical pitfalls for network training and the interpretation of benchmark results. I will also discuss ways to improve cross-dataset generalization.