Lehrstuhl für Bildverarbeitung

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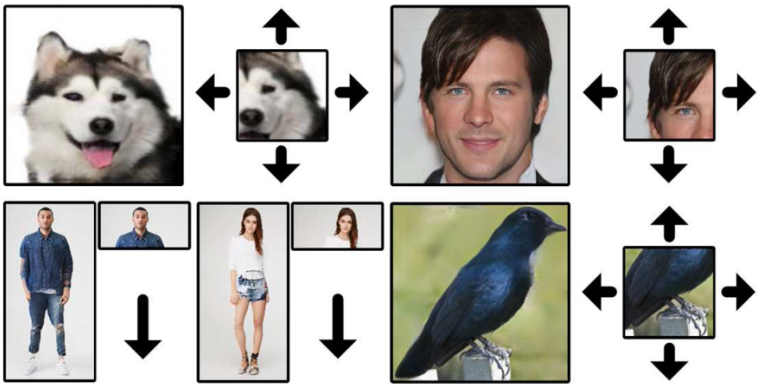
Master Thesis:

Image Extrapolation with Neural Networks



***Yi Wang, Xin Tao, Xiaoyong Shen, Jiaya Jia**; Wide-Context Semantic Image Extrapolation, Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2019, pp. 1399-1408*

Description

Compared to image inpainting, which gained attention with recent progress in deep learning, the complementary task image outpainting or extrapolation is less explored. Inpainting methods are not directly applicable to the extrapolation task and different problems arise. Additionally, most of the published works only apply image outpainting with a low target resolution. Recent advances in the research of Generative Adversarial Networks (GANs) have shown also relatively high resolutions are possible for image generation. The aim of this thesis is to develop a neural network that is capable of high-resolution image extrapolation, eventually incorporating GANs. This will include the following **tasks**:

- Literature research on the state of the art
- Drafting of one or more approaches
- Implementation and training of the network
- Evaluation of the results on comparison with state of the art

You should bring the following **requirements**:

- Communication skills
- Programming skills (Python)
- Interest in neural networks

Ideally you also bring:

- Knowledge about / experience with neural networks
- Knowledge of a deep learning framework (e.g. Pytorch)
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