Master Thesis:
Deep Learning Image Extrapolation for Video Coding


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. Current deep learning methods are usually trained for a specific data domain. Although some approaches are quite flexible in regard of the size of the image and extension area, they are not well suited for application in video coding because of complexity issues. The goal of the thesis is the design of a neural-network-based image extrapolation algorithm for variable image size and extension area with the application in video coding in mind.

This will include the following tasks:
- Literature research on the state of the art
- Drafting of one or more approaches
- Implementation and evaluation

You should bring the following requirements:
- Communication skills
- Programming skills
- Interest in neural networks

Ideally you also bring:
- Knowledge of a deep learning framework (e.g. Pytorch)

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