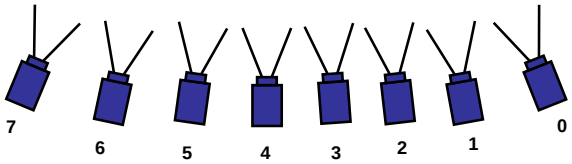
DTU Fotonik
Department of Photonics Engineering

MSc Thesis Project

Lightfield and Multiview Image and Video Coding.

Introduction: Multiview image and video are appearing in many forms and leading to large volumes of data. Multiview formats require very high raw bit-rates, but also a high degree of redundancy. This project will focus on the multiview format called lightfield images with many smaller images of a scene captured at different angles. The goal of the project is to investigate novel coding techniques for lightfield multiview images and video. Having flexible access is also a desired feature potentially in conflict with a goal of the highest compression. Trade-off of flexible access and efficient compression shall be studied.



Contents: In the project, the student(s) will work on algorithms for coding and processing lightfield images and video. The project will start by coding light field images and if time permits extend to light field sequences providing 3D video. The compression performance shall be evaluated as well as assessment of the flexibility in terms of accessing parts of the data. The project may be conducted in relation to a newly started EU Research project, RealVision, on realistic digital imaging and video of accurate, high-quality imagery, which faithfully represents the physical environment. The ultimate goal is to create, code, distribute and display images, which are perceptually indistinguishable from a real scene

Prerequisites: Knowledge of image or video coding and processing as e.g. in 34241 Digital Video Technology, 34240 Data Compression or 34250 Advanced Image and Video Coding.

Additional information:

- Contact teacher.

Practical details: The project is intended for 1 or 2 students with 30 ECTS-points per student.

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