



Abschlussvortrag Bachelorarbeit Emre Cem Elevis

„Compression of 3D (Voxel) Textures for Medical Imaging“

In this thesis, we compare various compression methods with a particular interest in medical imaging and standards that are compatible with the most widely used medical imaging format Digital Imaging and Communications in Medicine (DICOM).

We evaluate various compression techniques suitable for medical imaging, based on metrics such as compression efficiency, structural similarity and encoding speed. We explore both lossless and lossy standards that are accepted by various medical communities. 2.7 We implement off-the-shelf video encoding algorithms from the Moving Picture Experts Group (MPEG) to be compatible with the DICOM standard. We also test the various encoding methods to provide insights to the particular compression methods most suitable for various imaging technologies and use-cases needed by the medical imaging community. Through this work, we aim to contribute to the field of medical imaging by providing insights into effective compression strategies that facilitate the efficient handling of large medical datasets, ultimately creating a discourse that may help in better patient outcomes.

We explore and propose a novel experimental encoding scheme suitable for 'intertwining' large volumes of data. This method aims to supplement current compression methods when it comes to archival of medical imaging where quite a lot of the information between patients is repetitive by nature and does not require instant access.

Betreuer der Arbeit: Prof. Dr. Thorsten Grosch, Prof. Dr. Rüdiger Ehlers

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Ort: Institut für Informatik
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