S4-1.3

A Real-Time WebGL Rendering Piepeline for MRI Using RayCasting Tranfer Functions

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We present a way to integrate real-time multi-intensity transfer functions in a web browser environment using WebGL. We apply a two-pass rendering in order to establish the opacity and color of the given MRI recording. This pipeline helps viewing high resolution voxel domains and the adjustment of a transfer function for highlighting specific features types of a given DICOM recording. With recent advancements in the augmented and virtual reality domains medical imaging has become a center stage subject by brining the data closer to the patient and the doctor. Besides virtual reality, visualizing brain reconstructions is vital in brain mapping and neuro research. In conclusion we show a viable approach in rendering, processing and visualizing MRI data in real time in a Web browser.