

laden gemeinsam zum

GASTVORTRAG

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“Multimodal Visualization with Interactive Closeups”

Abstract:

Closeups are used in illustrations to provide detailed views on regions of interest. They are integrated into the rendering of the whole structure in order to reveal their spatial context. In this talk we discuss the concept of interactive closeups for medical reporting. Each closeup is associated with a region of interest and may show a single modality or a desired combination of the available modalities using different visualization styles. Thus it becomes possible to visualize multiple modalities simultaneously and to support doctor-to-doctor communication on the basis of interactive multimodal closeup visualizations. We discuss how to compute a layout for 2D and 3D closeups, and how to edit a closeup configuration to prepare a presentation or a subsequent doctor-to-doctor communication. Furthermore, we introduce a GPU-based rendering algorithm, which allows to render multiple closeups at interactive frame rates. We demonstrate the application of the introduced concepts to multimodal PET/CT data sets additionally co-registered with MRI.

Biography:

Ivan Viola is Associate Professor at University of Bergen, and Scientific Adviser at Christian Michelsen Research (CMR), Bergen, Norway. He received M.Sc. in 2002 and Ph.D. in 2005 from Vienna University of Technology, Austria. His research is focused on application of illustrative visualization for communication of complex scientific data. Viola co-authored several scientific works published in international journals and conferences such as IEEE TVCG, IEEE Visualization, and EuroVis and acted as a reviewer and IPC member for conferences in the field of computer graphics and visualization (e.g. IPC IEEE Visualization 2009, EuroVis 2009). He is member of Eurographics, NorSIGD, IEEE Computer Society, VGTC.

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