

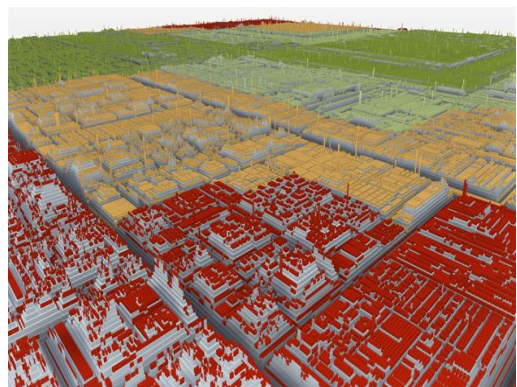
Visual Analytics in Practice

Visual analytics is one of the key technological directions that shape how we can handle, manage, and use big data across different application domains. This project aims at designing and implementing selected visual analytics techniques for two key areas: massive video data and massive sensor data.

For *massive video data*, a key challenge for visual analytics represents the way data is passed through the processing pipeline. In particular, giga-pixel images demand for advanced processing and rendering techniques to become real-time or feasible on mobile devices. High-resolution images also require appropriate rendering and interaction techniques to fully exploit the information density. In addition, space-time coherence is essential for features that allow users to analyze, shorten, or summarize video contents.



For *massive sensor data*, typically generated by sensors integrated into engines and physical environments, visual analytics demands for efficient data processing and effective visual means. Visual sensor data analytics can help to monitor parameters of entire production pipelines, to observe uncommon events, or to identify and understand correlations and relationships within big sensor data. In particular, visual sensor analytics is essential for applications in predictive maintenance.



Students should outline concepts and techniques for the corresponding two domains, and implement and test techniques that assist to build next-generation visual analytics tools and applications.

These topics link to current research and software projects of the HPI's Computer Graphics Systems group. It is especially suited for further research in the context of a master thesis or a future doctoral thesis. Further, the master project can be used to start working as a student assistant or software developer at our research partners.

Contact

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