Challenges and Solutions for Real-Time Immersive Video Communication

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The mission in immersive media is to design novel communication systems offering sensations similar to those experienced in real life. Such systems would re-create the perception of natural conditions, spaces and sensory stimuli to provide convincing impressions of social and physical presence. The wide field of applications reaches from the daily business – where immersive 3D videoconferencing may introduce a new era of tele-collaboration - to professional entertainment. The desired immediate response in video communication requires real-time capability in the whole 3D video processing chain.

In this seminar an overview of the state-of-the-art is given in order to motivate the needs for research and development in this new area. In the second part, systems and concepts of current immersive video communication approaches are presented. Thirdly, a detailed insight in algorithm solutions of the whole 3D video processing chain is given, providing the fundamentals of projective and multiple-view geometry wherever necessary.

Course Topics:

• Immersive Systems — State of the Art
• Methodologies for Immersive Video Approach
  - Concepts
  - Systems
• Algorithmic Solutions
  - 3D video processing
  - Projective geometry
  - Multiple views

Info

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