Département d'**informatique**
Unité de formation et de recherche
de mathématique et d'informatique
Université de Strasbourg

Sujet de stage « recherche »

Virtual-reality simulations of interior space

Accueil : Équipe **IGG** (Informatique Géométrique et Graphique) Laboratoire **ICube** (Laboratoire des sciences de l'ingénieur, de l'informatique et de l'imagerie), Strasbourg

Encadrement / Scientific supervisors: Daniel OBERFELD, Birgitta DRESP-LANGLEY

Lieu de stage: IHU Pavillon Clovis Vincent (Hôpital Civil)

This internship is part of a research project conducted in collaboration between Dr. Daniel Oberfeld (Johannes Gutenberg-Universität Mainz, visiting scholar "Chaire Gutenberg" at Laboratoire ICube), Prof. Dominique Bechmann, and Dr. Birgitta Dresp-Langley. Human audio-visual perception of simulated interior space is investigated. The task for the intern is to provide high-fidelity (photorealistic) simulations of interior spaces with a rectangular shape, varying width, depth, and height, varying textures of the surfaces (e.g., light-gray paint on walls and ceiling and dark carpet on the floor), and defined lighting (e.g., several artificial light sources positioned on the ceiling). The simulated rooms are to be presented stereoscopically on an HTC Vive Pro virtual-reality headset. In the experiments, participants must be able to explore the room interactively by moving inside the simulated space and by looking around. For this reason, the real-time VR simulations need to be coupled to the head- and motion tracking data provided by the HTC Vive Pro with low latency. Also, in the experiments the visual simulations will be combined with auditory VR simulations, which requires that the motion tracking data are made available as a real-time stream that is sent to the auditory VR simulation software. This work will be done under supervision in the framework of the Gutenberg Chair appointment 2019-2020 of Dr. Daniel Oberfeld.