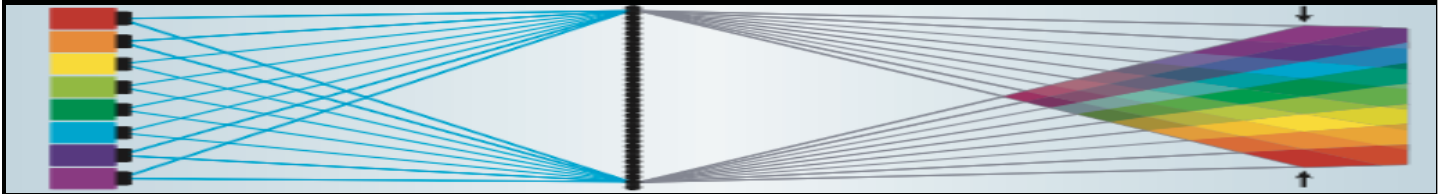


Student Project 3D Stereoscopic Movie Tour of the IFI – Capturing and Interactive Display



University of Zurich
Department of Informatics



Topic

3D stereoscopic movies and TV are rapidly gaining momentum in the entertainment and advertisement industry, and high-quality consumer 3D display systems are becoming widely available at low cost.

Using a stereo-video camera, a tour through the IFI and Blinzmühle location should be recorded for experimental and promotional use. A major issue to be addressed for capturing is the continuous smooth recording, eliminating jittering due to unsteady camera positioning. Hardware or post-process software solutions can be considered.

The recorded stereo video sequence should then be displayed on an immersive display system, using an auto-stereoscopic LCD screen as well as traditional left-right passive (using polarized images) and active

stereo (using shutter glasses) rendering techniques.

Assignment

In this student project, a stereo video sequence should be captured and processed resulting in a smooth walk-through recording in stereo of our institute. A video real-time capturing application and post-processing tools must be implemented for our Bumblebee 2 stereo video camera.

A stereo-video display application must be implemented for our multiview-stereoscopic LCD monitor that allows movie like control and display of the recorded walkthrough video. This simple display application should also be ported to our Equalizer rendering framework for display of the stereo video using passive and active stereo display (on immersive display screens).

Requirements

Cross-platform application development with QT, C++. Basic knowledge of video processing and 3D graphics are beneficial.

Work Load

- 20% theory
- 60% implementation
- 20% testing

Student Project Type

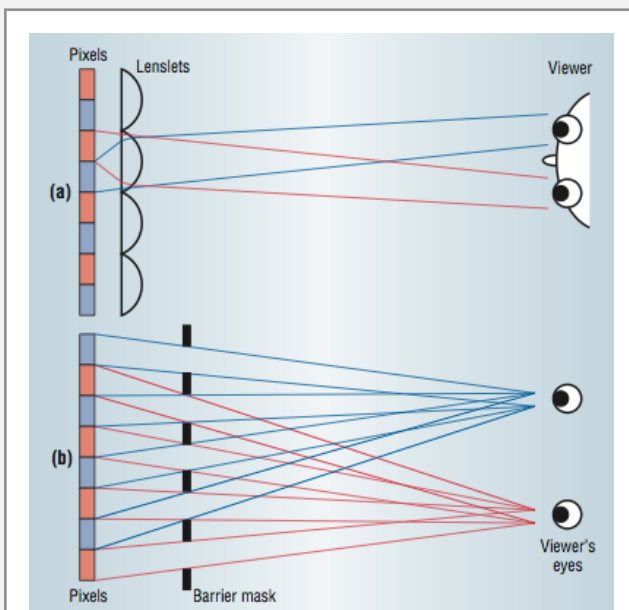
This project can be done as a student project, practicum or Bachelor thesis. Goals are adjusted depending on the project type.

Supervision

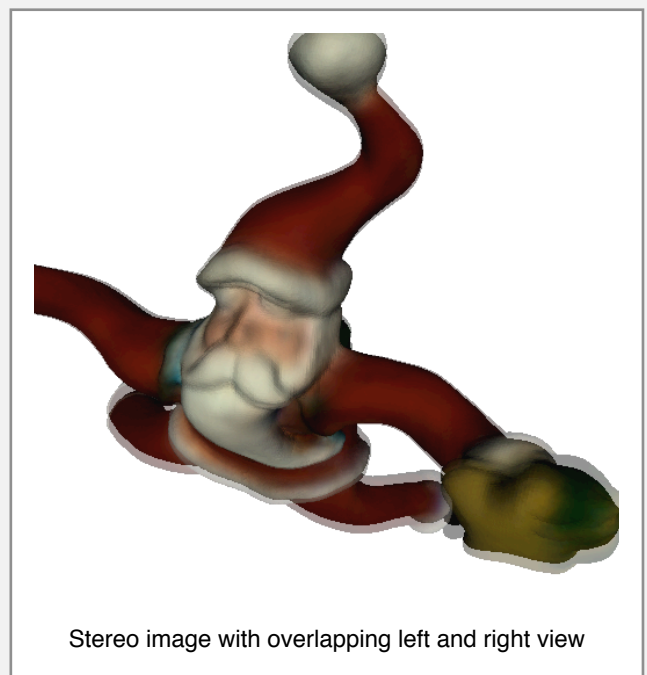
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Multi-view auto-stereoscopic display system



Stereo image with overlapping left and right view