ICT08-019 - Temporal-Consistent Stereo Matting for High-Quality Novel View Synthesis and Visual Effects

Abstract

This project develops new image processing techniques for the emerging field of 3D television. Using two videos recorded by slightly staggered cameras, a three-dimensional model of the moving scene is created, the challenge for computing being to achieve a high-resolution reconstruction of object boundaries and to create flowing transitions between the single frames of a 3D sequence. The information thus obtained serves as an input for an autostereoscopic screen which uses these results in order to provide the viewer with a natural depth impression in the three-dimensional imaging. The project results are furthermore to be used to develop the exciting new option of a “free viewpoint” video, where the user is given control over a virtual camera to select his/her preferred viewpoint.

Keywords:
visual computing, video, matting, stereo, optical flow, view synthesis

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Further links to the persons involved and to the project can be found under
https://www.gmbh.wwtf.at/funding/programmes/ict/ICT08-019/