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Modeling 3D Scenes: Paradigm Shifts in Photogrammetry, Remote Sensing and Computer Vision

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Abstract

Modeling of 3D scenes has been the defining subject in photogrammetry or remote sensing for more than 100 years, and it is now for about 30 years one of the main subjects in computer vision. There are recently significant paradigm shifts in both areas. Digital imaging reshaped photogrammetry and remote sensing, and active vision (e.g., integrating laser range finder, SAR, or structured lighting) allows accurate and cost- and time-efficient 3D shape recovery in computer vision. Traditional approaches such as shading based shape analysis or binocular stereo are supported or even totally replaced by active vision technologies. New camera technologies (e.g., developments of different sensor geometries, increase in image resolution, and more accurate photometric properties) are a necessary prerequisite for these developments. This paper briefly reviews such processes (e.g., illustrated by a project for 3D reconstruction of castle Neuschwanstein, using multi-viewpoint laser range data and panoramas, acquired by a rotating line camera, designed at DLR) and gives some conclusions.

Gastgeber: Prof. Dr. Hans Burkhardt

Alle Interessenten sind recht herzlich eingeladen.

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