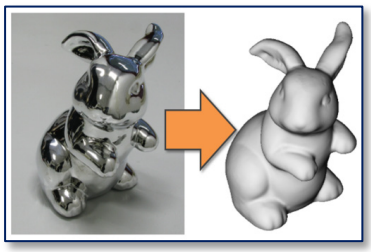
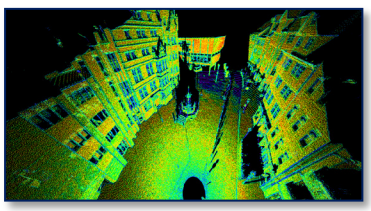
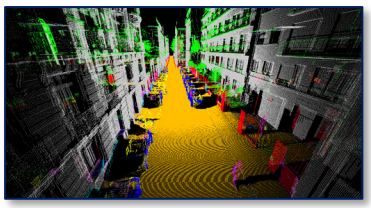
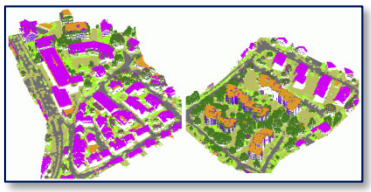
Tutorial 7 @ XXIII ISPRS Congress, 11 July 2016, Prague, Czech Republic

Acquisition and Automatic Characterization of Scenes - From Point Clouds to Features and Objects -









Organizers

Martin Weinmann, Michael Weinmann, Franz Rottensteiner, Boris Jutzi

Description

The adequate acquisition and analysis of a scene are of great interest for photogrammetry, remote sensing and computer vision. In the scope of this tutorial, we will address four major issues in this regard. The first part of the tutorial will give an introduction on active optical sensing (laser scanning, range imaging) and processing techniques to gain a basic surface description by labeled 3D points. The second part of the tutorial will focus on geometry and reflectance acquisition and provide both fundamentals and recent advances in these domains with examples for various applications. The third part of the tutorial will focus on a semantic interpretation of point cloud data and thereby address all components of a typical processing workflow. The forth part of the tutorial will focus on a context-based classification of point cloud data and cover topics reaching from the fundamentals of graphical models to the adaptation of such graphical models to point cloud data.

Keywords

Laser Scanning, Range Imaging, Geometry Acquisition, Point Cloud, Mesh, Reflectance Acquisition, Feature Extraction, Classification, Interpretation, Contextual Information

Technical Program

1 *With Active Optical Sensing to Labeled 3D Points*
Boris Jutzi, Karlsruhe Institute of Technology

2 *Geometry and Reflectance Acquisition*
Michael Weinmann, University of Bonn

3 *From Irregularly Distributed 3D Points to Semantic Objects*
Martin Weinmann, Karlsruhe Institute of Technology

4 *Context-Based Classification of Point Cloud Data*
Franz Rottensteiner, Leibniz Universität Hannover

Target Audience

Beginner to intermediate. All students, researchers and practitioners interested in active optical sensing, geometry and reflectance acquisition, and point cloud classification.

Registration

Together with the registration for the ISPRS Congress. More information: http://www.isprs2016-prague.com