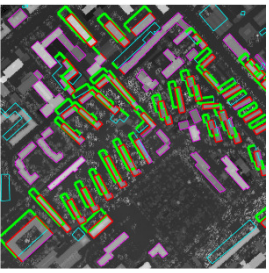
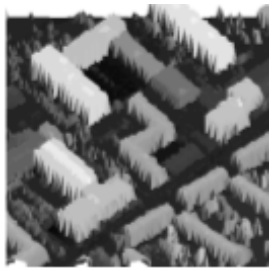
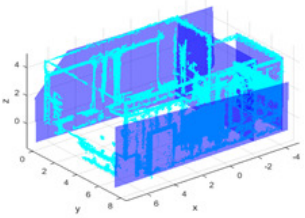
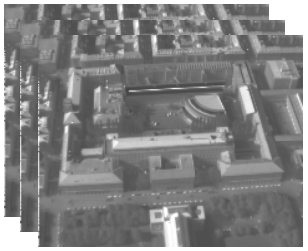
THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Department of
Civil, Environmental and Geodetic Engineering



SMART GEO: FROM REMOTE SENSING DATA TO GEOSPATIAL SEMANTICS

Due to increasing amount of remote sensing data coming from multiple sources as well as huge demand for geospatial information, innovative methods are needed to retrieve required information from unstructured data, such as geolocation, geometry, semantics and topological relations. This talk will review several image analysis methods which form a pipeline of this information retrieval process. In particular, co-registration and fusion of remote sensing data will be discussed. Furthermore, recent trends in semantic analysis of images using deep learning will be discussed. Finally, 3D geometry retrieval techniques with focus on reconstruction of structured geometries will be presented with potentials for future developments in this areas outlined.

Dorota Iwaszczuk, PhD
Visiting Scholar
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2017: Postdoctoral Research Fellow, Dept. of Civil, Geo and Environmental Engineering , Technical University of Munich, Germany
2015: PhD, Photogrammetry & Remote Sensing, Technical University of Munich, Germany
2008: MSc. in Geodesy and Cartography at AGH University of Science and Technology, Cracow, Poland

Dr. Iwaszczuk is a Postdoctoral Researcher in Photogrammetry and Remote Sensing. Her research interests focus on sensor fusion, semantic labeling, deep learning, 3D reconstruction, pattern recognition, IR-thermography, and crowdsourcing. In her PhD thesis, entitled "Automatic texturing of 3D models of urban areas using image sequences from airborne TIR cameras" she investigated, among others, the influence of statistical uncertainties on the co-registration of 3D building models and thermal image sequences. She also worked with data fusion, including fusion of hyperspectral images with digital surface models, multi-scale fusion of thermal images, smartphone data fusion as we as on semantic labeling and creation of 3D indoor models. Currently she works on the project "From Point Clouds and Images to Semantic Information: A Case Study for Indoor-Outdoor Building Modeling" as a visiting scholar at OSU.

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