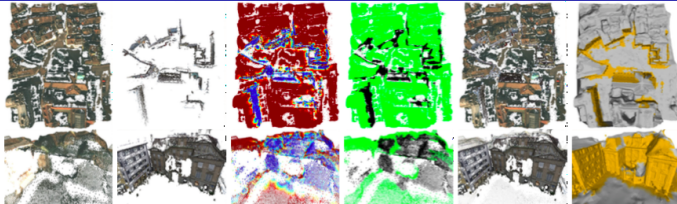


# Efficient Volumetric Fusion of Airborne and Street-Side Data for Urban Reconstruction

A. Bodis-Szomoru, H. Riemenschneider, L. V. Gool (ICPR 2016)



- ▶ Introduces an approach that unifies a detailed street-side MVS point cloud & a coarser but more complete point cloud from airborne acquisition in a joint surface mesh
- ▶ Airborne acquisition and on-road mobile mapping provide complementary 3D information of an urban landscape
- ▶ The former acquires roof structures, ground, and vegetation at a large scale, but lacks the facade and street-side details, while the latter is incomplete for higher floors and often totally misses out on pedestrian-only areas or undriven districts
- ▶ Proposes a point cloud blending & volumetric fusion based on ray casting across a 3D tetrahedralization, extended with data reduction techniques to handle large datasets
- ▶ First to adopt a 3DT approach for airborne/street- side data fusion
- ▶ Pipeline exploits typical characteristics of airborne and ground data, and produces a seamless, watertight mesh that is both complete and detailed
- ▶ Evaluates on self-recorded 3D urban data