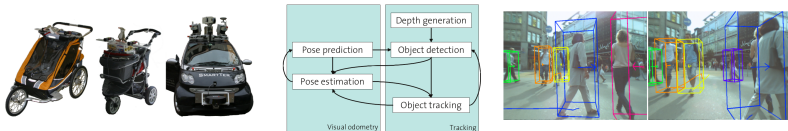


Robust Multi-Person Tracking from a Mobile Platform

A. Ess, B. Leibe, K. Schindler, and L. V. Gool (PAMI 2009)



- ▶ Multi-person tracking in busy pedestrian zones using a stereo rig on a mobile platform
- ▶ Joint estimation of camera position, stereo depth, object detection, and tracking
- ▶ Object-object interactions and temporal links to past frames on a graphical model
- ▶ Two-step approach for intractable inference (approximate):
 - ▶ First solve a simplified version to estimate the scene geometry and object detections per frame (without interactions and temporal continuity)
 - ▶ Conditioned on these results, object interactions, tracking, and prediction
- ▶ Combining Belief Propagation and Quadratic Pseudo-Boolean Optimization
- ▶ Automatic failure detection and correction mechanisms
- ▶ Evaluated on challenging real-world data (over 5,000 video frame pairs)
- ▶ Robust multi-object tracking performance in very complex scenes