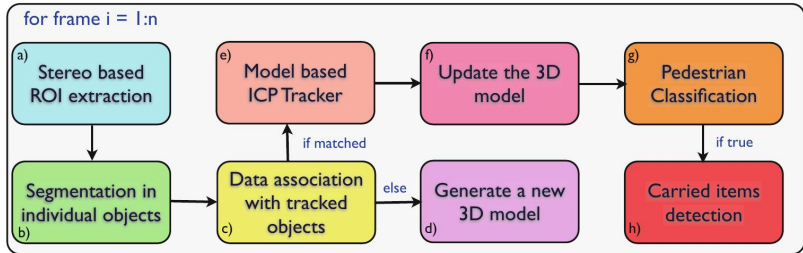# Taking Mobile Multi-object Tracking to the Next Level: People, Unknown Objects, and Carried Items
D. Mitzel and B. Leibe (ECCV 2012)

- Mobile multi-object tracking in challenging street scenes
- Tracking-by-detection limits to object categories of pre-trained detector models
- Tracking-before-detection approach that can track known and unknown object categories
- Noisy stereo depth data used to segment and track objects in 3D
- Novel, compact 3D representation allows to track robustly large variety of objects while building up models of their 3D shape online
- Comparison of the representation with a learned statistical shape template allows to detect anomalous shapes such as carried items
- Evaluation on several challenging video sequences of busy pedestrian zones, the BAHNHOF and SUNNY DAY dataset [1]

[1]Ess, A., Leibe, B., Schindler, K., Van Gool, L.: Robust Multi-Person Tracking from a Mobile Platform. PAMI 31(10), 18311846 (2009)