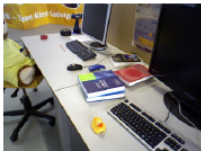


# Robust Odometry Estimation for RGB-D Cameras

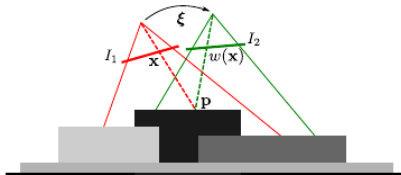
Kerl, Sturm, Cremers; ICRA 2013



(a) reference image  $I_1$



(b) current image  $I_2$



**Problem:** Given two consecutive images  $I_1$  and  $I_2$ , find relative pose  $\xi$ .

Given:

- Real-time CPU implementation
- Paper
- Hands-on with Kinect

Goals:

- Refactor to real-time (or even faster)
- Estimate  $\xi$  by minimizing photometric and geometric error
- Implement different weightings: Huber, Student-t, Cauchy
- Implement iteratively re-weighted least squares

**Supervisor:** Bjoern