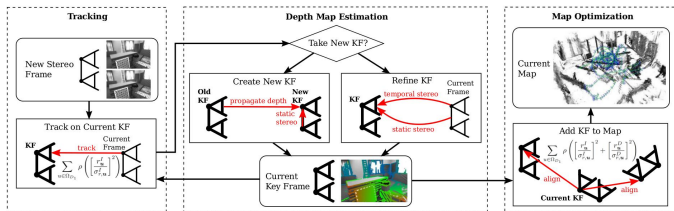


Large-Scale Direct SLAM with Stereo Cameras

J. Engel, J. Stckler and D. Cremers (IROS 2015)



- ▶ Large-Scale Direct SLAM algorithm for stereo cameras (Stereo LSD-SLAM) that runs in real-time
- ▶ Direct alignment of the images based on photoconsistency of all high contrast pixel in contrast to sparse interest-point based methods
- ▶ Couple temporal multi-view stereo from monocular LSD-SLAM with static stereo from a fixed-baseline stereo camera setup
- ▶ Incorporating both disparity source allow to estimate depth of pixels that are under-constrained in fixed baseline stereo
- ▶ Fixed baseline avoids scale-drift that occurs in monocular SLAM
- ▶ Robust approach to enforce illumination invariance
- ▶ State-of-the-art results in KITTI and EuRoC Challenge 3 for micro aerial vehicles