Keyframe-Based SLAM with Bundle Adjustment

Gang-of-Three
Goals

- constant time
- more accurate than visual odometry
- robust vs.
  - drift
  - getting lost
Approach

Localization - 1st Thread:
- FAST + FREAK
- reprojecting map
- Umeyama + RANSAC
-> Schedules map updates

Mapping - 2nd Thread:
- Subpixel recalculation of point-pose constraints
- Merge KeyFrame into map
- Bundle-Adjustment with ceres-solver
Extras

- use depth observations in cost function
- Occlusion checking during pose estimation
- incorporate Pose-Pose constraints
- car parameters as user interface