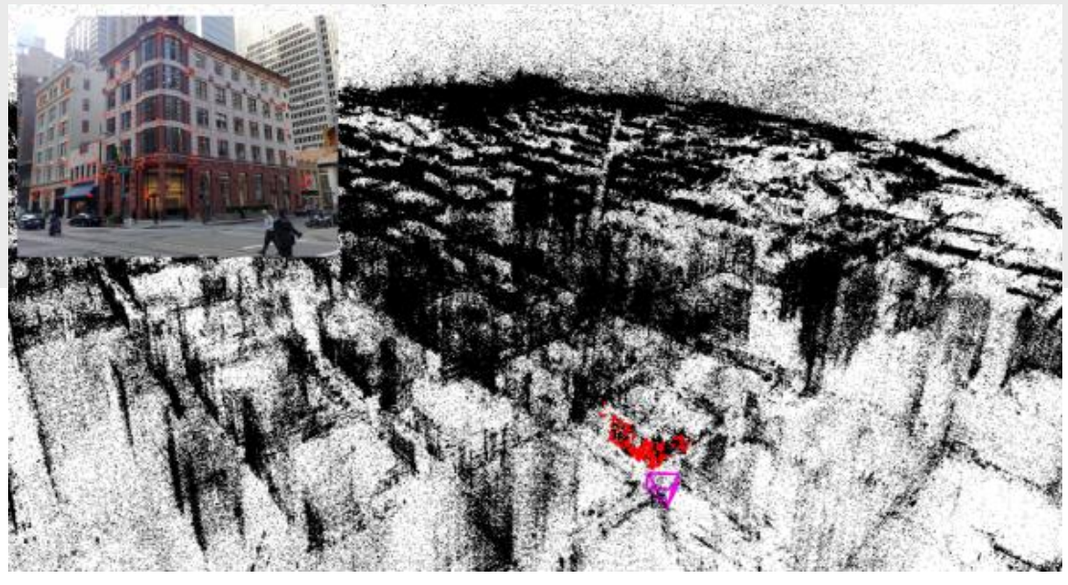
Camera Localization With Depth from Image Sequences



Goal: Develop a localization system based on depth information extracted from multiple images

Description:

The intention of this project is to investigate the use of depth data for image-based localization, i.e., for estimating the camera pose of one or more query images wrt. a 3D scene model.

Given a sequence of photos taken with the same camera, the goal of this project is to obtain a depth value and a plane orientation for each feature in each image. This information is obtained from depth maps computed for each image and is used to viewpoint-normalize the features [1]. Next, a voting-based approach similar to [2] is used to determine the position and orientation from which each image was taken.

[1] Wu et al., "3D Model Matching with Viewpoint Invariant Patches", CVPR 2008

[2] Zeisl et al., "Camera Pose Voting for Large-Scale Image-Based Localization", ICCV 2015

Requirements / Tools:

Required: C++ / Matlab
Recommended: Computer Vision lecture

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