

SLAM using Deep Learning

Computer Vision (CS6350)

TPA - 5

1 Problem Statement

SLAM, Simultaneous Localization And Mapping is common in robotics literature. It involves creating a spatial map (3D) of the environment and simultaneously estimating the pose of the camera. SLAM problem is commonly used in the navigation of robots in an unknown environment (i.e. no accurate map is available). Using the specified dataset, create a spatial map and the camera poses in the scene.

2 Input

- RGB-D Video Sequence

3 Output

- Camera trajectory and incremental reconstruction of the scene, with incoming video frame
- Should work as online demo on a new video

4 Datasets

- KITTI dataset
- TUM dataset

5 References

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- Raul Mur-Artal and Juan D. Tardos, "ORB-SLAM2: an Open-Source SLAM System for Monocular, Stereo and RGB-D Cameras", IEEE Transactions on Robotics, 2017
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