

ABSTRACT

The theme: The Simultaneous Localization and Mapping (SLAM) method for 3D-reconstruction of objects from video stream

The bachelor thesis: 92 p. 33 fig., 7 tabl., 1 appendix, 11 sources.

Work analyzes the methods of constructing 3D models of an object (solving the problem of simultaneous localization and mapping SLAM) from the camera video stream. It provides theoretical information about next methods - FAST-SLAM, DP-SLAM, LSD-SLAM, ORB-SLAM, CORE-SLAM. There is also analysis of the method LSD-SLAM. There were necessary experiments and their comparison.

Object of study: 3D object reconstruction.

Subject of research: Simultaneous localization and mapping (SLAM) method.

Purpose: to compare different SLAM implementations and analyze LSD-SLAM method.

Methods and apparatus: LSD-SLAM method, a laptop that runs Ubuntu Trusty 14.04 operating system, webcam.

The results and their novelty: Analysis of LSD-SLAM method. Comparison of different experiments results. Recommendations on how to use LSD-SLAM method.

Uses: Any system that needs 3D-model of the real-world object.

3D-MODEL, 3D-OBJECT, 3D-RECONSTRUCTION, CAMERA, MODEL, SLAM, FAST-SLAM, DP-SLAM, LSD-SLAM, ORB-SLAM, CORE-SLAM.