



+ Feature

Visual navigation technology consists of simultaneous localization/mapping module and AI object detection module. The main features are obstacle detection on self-driving roads and the robustness of localization based on dynamic object recognition. The image sensor is monocular/stereo camera on the vehicle for image capture and feature matching. In order to robust localization and mapping, the camera pose estimation is computed by 3D geometry and environmental information.

+ Technique

1. Visual simultaneous localization and mapping
2. AI object detection
3. Monocular/stereo camera calibration
4. System design

+ Specification

1. Image resolution: 720p
2. Operating system: Linux Ubuntu 16.04
3. Frame rate: > 10fps
4. Absolute trajectory error: < 1m
5. Relative trajectory error: < 0.8m
6. Interface: CAN/Ethernet

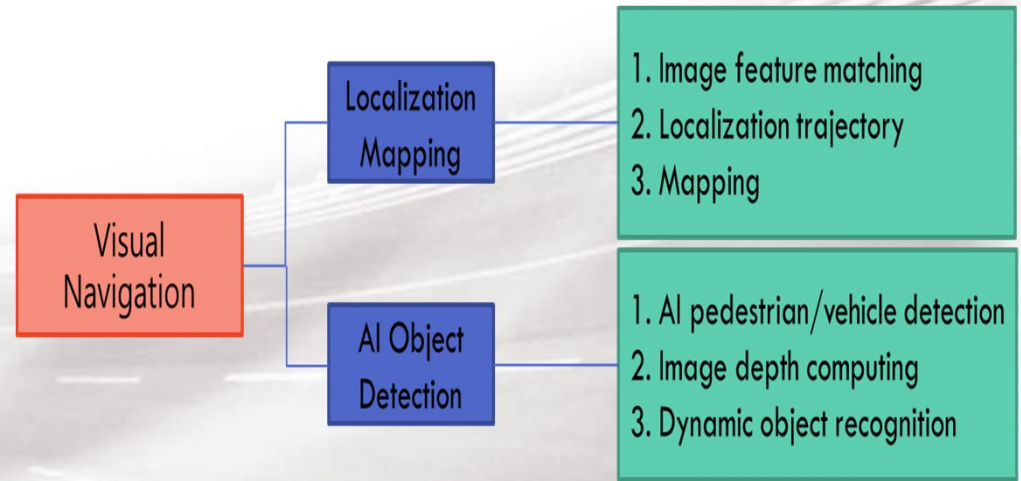


Demonstration

Visual navigation system



Visual navigation architecture



Features

Field experiment : Parking lot(Max. 200m)

