

DSP-IP real-time image-based navigation

About

TBD

Table of contents

[About](#)

[Table of contents](#)

[Process outline](#)

[Light SLAM](#)

[Bundle adjustment / Localize reference](#)

[Pixel-to-ground adjustment and ground-to-pixel preview](#)

[Fix drift](#)

[General Information and reading material](#)

Process outline

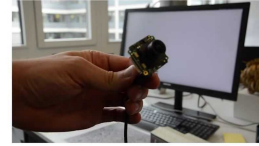
Light SLAM

1. The RPG SVO Pro Open repository contains advanced software for Semi-direct Visual Odometry (SVO), enhancing robotics and perception research.
2. It supports various camera models, integrates active exposure control, and implements global bundle adjustment for improved localization and mapping.
3. This open-source tool is particularly useful in research and industrial applications, offering robust visual-inertial odometry and SLAM capabilities.

SVO: Fast Semi-Direct Monocular Visual Odometry (TRO'17, ICRA'14)

We propose a semi-direct monocular visual odometry algorithm that is precise, robust, and faster than current state-of-the-art methods. The semi-direct approach eliminates the need of costly feature extraction and robust matching

 <https://www.youtube.com/watch?v=2YnIMfw6bJY>



Motion estimation and mapping with a single camera

https://github.com/uzh-rpg/rpg_svo_pro_open

Depth perception with SVO:

<https://github.com/yan99033/CNN-SVO>

Bundle adjustment / Localize reference

<https://github.com/cvg/Hierarchical-Localization>

<https://github.com/cvg/pixel-perfect-sfm>

<https://github.com/navoday01/Point-cloud-alignment-with-ICP>

https://github.com/ChevronOne/pc_alignment_tools

<https://github.com/PetropoulakisPanagiotis/ICP-Variants>

Pixel-to-ground adjustment and ground-to-pixel preview

TBD

Fix drift


TBD - apply reference localization matrix to the image project

General Information and reading material

<https://github.com/mikeroyal/Photogrammetry-Guide>

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 <https://www.pix4d.com/>

