Visual Odometry Pipeline

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January 4, 2017

Sandbox

Figure 1: Cute pig image

Symbols, Nomencalture

Introduction

The aim of this mini project is the developement of a visual odometry pipeline. This pipeline takes the consecutive gray-scale images of a single digital camera as input. Therefore the pipeline developed in this mini project is a monocular visual odometry pipeline.

The output of the pipeline is the position of the camera in relation to its initial position for each frame.

keywords: (VO, sequential, monocular, markov assumption)

Implementation

Framework

(keywords: MATLAB, Git)

Coordinate Frames

Pipeline overview

The pipeline consists mainly of two parts, its inizialisation and its continuous operation. Both of them are discussed within the two following sections.

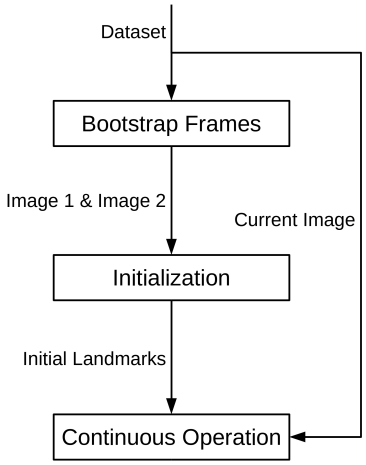

Figure 2: Rough Flow chart

Options and parameters

(keywords: parameter handling, GUI)

Initialization

Continuous Operation

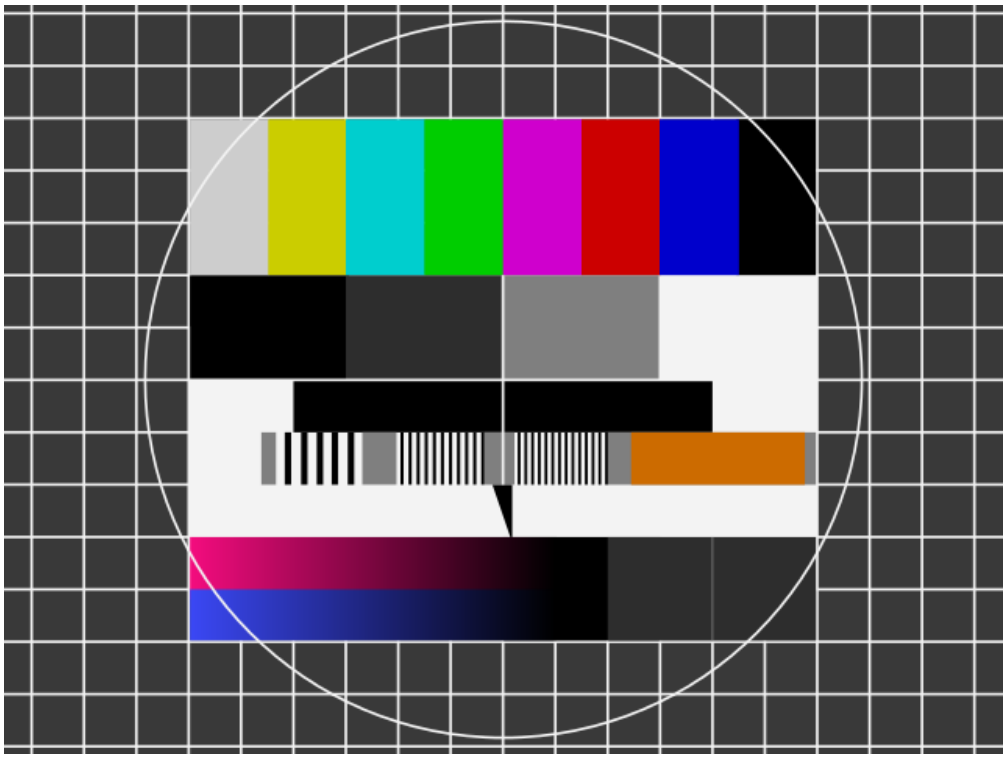

Figure 3: Init Flow chart

Results

Overall performance

(keywords: Real time ness, comparison to groundtruth, compare different datasets Impact of features)

Discussion

What have we learned, what worked?
Possible future work, improvements (loop closure, ...)

Conclusion

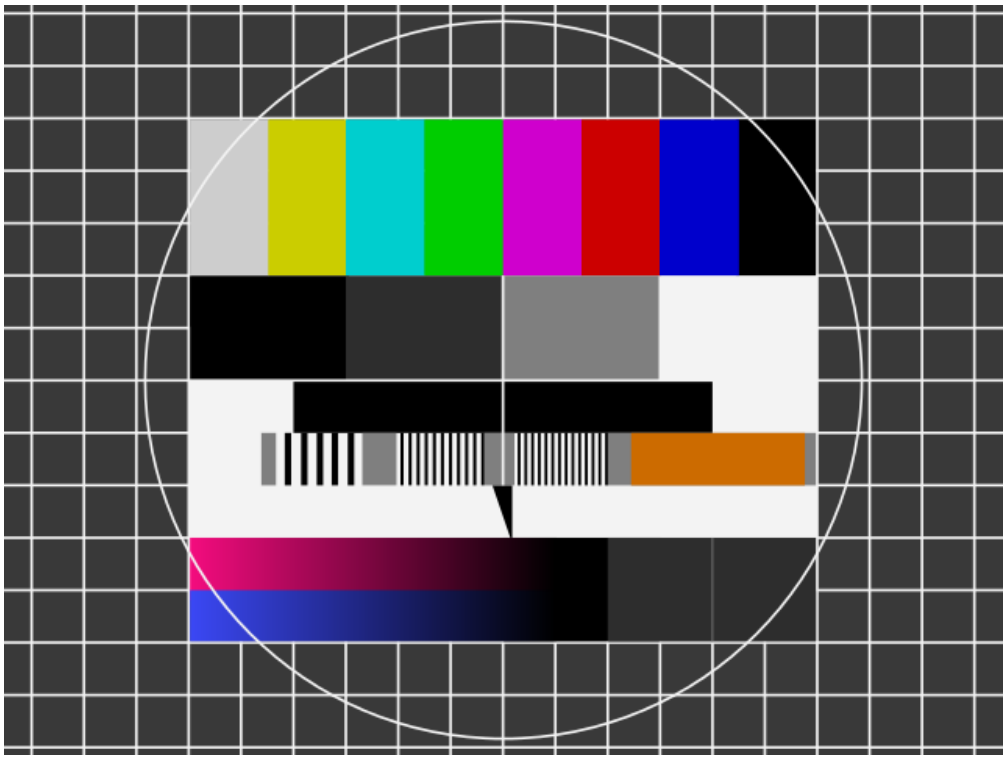

Figure 4: Cont Flow chart