Visionaries Final Project

Rudolf Vocilka

Mohamed Zahra

Description

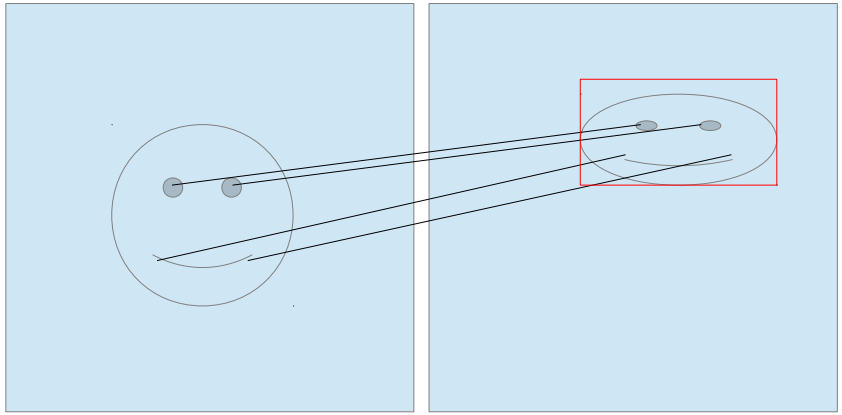
Description

Find a reference image within a scene and estimate the pose in real time

Using the pose estimate we can draw a rectangle around the found object indicating the pose

The pose is calculated using DLT and RANSAC

Using the camera intrinsics we can calculate the rotation and translation and display a 3d object above the found object



Reference Image Scene Image

Roadmap

- 17.06.2014 : Kick off
- 24.06.2014:
  - Matching between camera image and pre defined image to get the 2D-2D point correspondances
  - Implement Direct Linear Transform to calculate the homography matrix
- 01.07.2014:
  - Implement RANSAC for calculating a robust homography matrix with small error
  - Display outline of matched object using the homography. E.g. green lines are drawn around one object

- Till 08.07.2014:
  - Match multiple different objects and draw different coloured outline

- **Project expansion prospects**:
  - Get the camera intrinsics matrix
  - Get the rotation and translation from the homography using the intrinsics matrix
  - Display a 3D model on top the found object(s)