

Tracking Competition

Many tracking technologies for Augmented Reality have been proposed so far. To allow a fair comparison of the state-of-the-art a tracking competition has been organized. Tracking quality is to be evaluated on a concrete and reasonably realistic industrial task. The competition is open to both academic and commercial participants. This contest mainly follows the points system of ISMAR2009 except for an additional rule which gives more credits according to the difficulty level assigned to each object. More details about this contest are available on the web.

For ISMAR 2010, 5 teams have been selected for the fair competition. A short description and its schedule are following.

1st day: 10/14/2010

Team 1: Millennium Three Engineering and Ryerson University, Canada

Member(s): Mark Fiala (mark.fiala@ryerson.ca)

MFD-5 Fiducial and IMU based Tracking System. Interactive bundle adjustment will be used on the mobile platform to build a 3D model of the fiducial marker locations, and integrate the measured fiducial landmarks provided.

Team 2: VTT Technical Research Centre of Finland, Finland

Member(s): Alain boyer, Petri Honkamaa, Tuomas Kantonen(Tuomas.Kantonen@vtt.fi), Otto Korkalo, and Timo Tossavainen

Tracking system based on 2D features from camera image, aided by an inertial sensor (gyroscope). 3D models are reconstructed off-line using several images of the picking areas and are registered to the global reference frame by manually identifying reference points from the images.

2nd day: 10/15/2010

Team 3: School of Optoelectronics, Beijing Institute of Technology, China

Member(s): Weng Dongdong, Li Dong (lidong.china@qq.com), and Xu Weipeng

Infra-marker-based optical tracking with main two parts: the tracking hardware and the portable computer. Infrared markers are generated by lasers and IR cameras are used for identification. After obtaining the pose of the IR cameras, the coordinate of the target objects can be obtained.

Team 4: Dept. of Virtual and Augmented Reality, Fraunhofer IGD, Germany

Member(s): HaraldWuest(Harald.Wuest@igd.fraunhofer.de), Mario Becker, and Folker Wientapper

KLT feature tracking (frame-by-frame)-based system using SLAM (Simultaneous Localization and Mapping) approach.

Team 5: Mataio Company, Germany

Member(s): one team from Metaio GmbH(info@metaio.de)

Mataio 1: Pure usual markerless tracking system using an extended SLAM framework, **or**

Mataio 2: Combined visual markerless and visual marker-based tracking system using a SLAM framework.