TALLINNA TEHNIKAÜLIKOOL

ENERGIA- JA GEOTEHNIKA DOKTORIKOOL II

Euroopa Liit
Euroopa Sotsiaalfond

Eesti tuleviku heaks

Course

Visual SLAM: A How-to Introduction

Visual SLAM: mis ja kuidas

Dr. Javier Civera, University of Zaragoza

SLAM, standing for 'Simultaneous Localization And Mapping', is considered one of the keystones for the development of truly autonomous robots. In short, its aim is that a mobile robot equipped with a set of sensors builds a model of its environment --the map-- while localizes itself on it. Though different sensors have been used for this task, the community currently bet on the camera as the main sensor due to the rich information it captures, its hardware benefits and a very large corpus of existing methods from the computer vision field.

The research on 3D vision and sequential optimization from robotics and computer vision has produced a mature set of techniques that estimate in real-time highly accurate maps and camera motions. The state of the art consists then on a set of well-stablished algorithms and an array of open research topics. The first aim of this course is to review the basics of the SLAM problem, namely: 1) visual features, 2) multiple view geometry, 3) robust estimation and 4) optimization techniques. After that, the limitations of these standard techniques will be discussed and the associated open research topics will be introduced.

SCHEDULE

Tuesday 22. May 2012

9.30 – 10.00	Registration (V312)
10.00 – 11.30	Introduction
11.30 – 11.45	Coffee
11.45 – 13.00	Problems
13.00 – 13.45	Lunch
13.45 – 15.30	Problems
15.40 – 16.40	Discussion

Wednesday 23. May 2012

10.00 – 11.30	Problems
11.30 – 11.45	Coffee
11.45 – 13.00	Problems
13.00 – 13.45	Lunch
13.45 – 15.30	Problems
15.40 – 16.40	Discussion

Ruum V-303

• Seminari/kursuse läbinuile väljastatakse **tunnistus**, mis kinnitab **1 EAP** saamist.

• Palume **eelregistreeruda hiljemalt 18. maiks 2012** e-posti aadressil**: mh@ttu.ee; • Telefon**: 620 3300, 512 0982, **Skype:** mehhatroonik