ALBERT-LUDWIGS-
UNIVERSITÄT FREIBURG

FAKULTÄT FÜR ANGEWANDTE WISSENSCHAFTEN

Gastvortrag

Zeit: Mittwoch, 8. 12. 1999, 14.00 Uhr c.t.
Ort: HS 036, Am Flughafen 17

Collaborative Multi-robot Localization

Dieter Fox

Carnegie Mellon University Pittsburgh

Abstract

Localization, that is the estimation of a robot's location from sensor data, is a fundamental problem in mobile robotics. In this talk I will present a probabilistic algorithm for collaborative mobile robot localization. Our approach uses a sample-based version of Markov localization, capable of localizing mobile robots in an any-time fashion. When teams of robots localize themselves in the same environment, probabilistic methods are employed to synchronize each robot's belief whenever one robot detects another. As a result, the robots localize themselves faster, maintain higher accuracy, and high-cost sensors are amortized across multiple robot platforms. I will describe experimental results obtained using two mobile robots that apply computer vision and laser range finding for detecting each other and estimating each other's relative location. Further experiments obtained in simulated environments demonstrate the benefits of this approach to groups of heterogeneous robots.

Gastgeber: Prof. Dr. Wolfram Burgard

Alle Interessenten sind recht herzlich eingeladen.

Organisation : Prof. Dr. B. Becker / F. Schmiedle

Weitere Informationen im WWW unter http://ira.informatik.uni-freiburg.de/FREAK/kolloquium oder von F.Schmiedle (Tel: 0761/203-8144; Email: schmiedl@informatik.uni-freiburg.de).