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Special Guest Lectures

Player-Stage: A Middleware for Ubiquitous Computing**Matthias Kranz, Ph.D. student, University of Munich**

Johnston Hall 338

September 25, 2006 - 11:00 am

Abstract:

The effective development and deployment of comprehensive and heterogeneous ubiquitous computing applications, such as sensor-equipped living environments or cognitive factories, is hindered by the lack of a comprehensive middleware infrastructure. Interfaces to sensors are company specific and sometimes even product specific. Typically, these interfaces also do not support the development of robust systems that can support sensor data fusion. Dealing with uncertainty and many sensor and actuator systems is nothing special to ubiquitous computing as it has been a major issue in robotics as well. But, in contrast, the autonomous robotics community has developed and used software infrastructures and libraries that successfully solved these issues. We therefore propose Player/Stage, a middleware commonly used as a de facto standard in robotics, as middleware platform for ubiquitous computing. It offers many features that we need in ubicomp as well: a common uniform interface for accessing a great variety of sensors (acceleration, cameras, etc.) and controlling actuators (like switches or displays) and a way to exchange data between them via computational interfaces. Player/Stage also offers the possibility to use 'virtual' hardware, e.g. have a virtual location system at hand for developing context-aware applications without the need to spend hundreds or thousands of dollars for a 'real' location system.

Speaker's Bio:

Matthias Kranz (28) finished his diploma in informatics at the Technische University Munchen in 2004. He currently is a third year Ph.D. student in the Embedded Interaction research group at the University of Munich, headed by Albrecht Schmidt. His research interests include tangible user interfaces, human-computer interaction and intelligent environments. His Ph.D. research focuses on design guidelines and design pattern for ubiquitous computing systems, with a specific focus on tangible user interfaces.

Refreshments will be served.