CARL VON OSSIETZKY universität OLDENBURG

Fakultät II *Informatik, Wirtschafts- und Rechtswissenschaften*
Department für Informatik

Sondervortrag

Am Donnerstag, dem **03. Februar 2011,** um **13:15** Uhr hält

Prof. Dr. Bradley Nelson
Institute of Robotics and Intelligent Systems, ETH Zurich

einen Vortrag mit dem Titel

Micro and Nano Robots

Der Vortrag findet im OFFIS, Escherweg 2, Konferenzraum F02 statt.

Abstract:
Microrobotics has recently entered the phase in which sub-mm sized autonomous robots are being realized. While the potential impact of these devices on society is high, particularly for biomedical applications, many challenges remain in developing genuine microrobots that will be useful to society. This talk will focus on applications of microrobots as well as approaches to their locomotion in liquid and on solid surfaces. Issues in the design of external systems for providing energy and control of microrobots must be considered, and the use of externally generated magnetic fields in particular appears to be a promising strategy. Theoretical and experimental issues will be discussed, functionalization of the devices, and efforts to scale microrobots to the nanodomain will be presented.

CV:
Bradley Nelson is the Professor of Robotics and Intelligent Systems at ETH-Zürich and is the founder of the Institute of Robotics and Intelligent Systems where he leads the Multi-Scale Robotics Lab.
His primary research direction lies in extending robotics research into emerging areas of science and engineering. His current research is in microrobotics, biomicrorobotics, and nanorobotics, including efforts in robotic micromanipulation, microassembly, MEMS (sensors and actuators), mechanical manipulation of biological cells and tissue, nanofabrication and NanoElectroMechanical Systems (NEMS).
Prof. Nelson received a B.S. (Mechanical Engineering) from the University of Illinois at Urbana-Champaign in 1984, an M.S. (Mechanical Engineering) from the University of Minnesota in 1987, and the Ph.D. degree in Robotics (School of Computer Science) from Carnegie Mellon University in 1995. During these years he also worked as an engineer at Honeywell and Motorola, and served as a United States Peace Corps Volunteer in Botswana, Africa. In 1995 he became Assistant Professor at the University of Illinois at Chicago, Associate Professor at the University of Minnesota in 1998, and Professor at ETH in 2002.
He has been awarded a McKnight Land-Grant Professorship and is a recipient of the Office of Naval Research Young Investigator Award, the National Science Foundation Faculty Early Career Development (CAREER) Award, the McKnight Presidential Fellows Award, and the Bronze Tablet. He was elected as a Robotics and Automation Society Distinguished Lecturer in 2003 and 2008 and has been a finalist for and/or won best paper awards at major robotics conferences and journals in 2004, 2005, 2006, 2007, 2008, and 2009. He was named to the 2005 "Scientific American 50", Scientific American magazine's annual list recognizing fifty outstanding acts of leadership in science and technology from the past year for his efforts in nanotube manufacturing. His lab won the 2007 RoboCup Nanogram Competition, the first year the event was held.
Professor Nelson serves on or has been a member of the editorial boards of the IEEE Transactions on Robotics, the IEEE Transactions on Nanotechnology, the Journal of Micromechatronics, the Journal of Optomechatronics, the International Journal of Biomechatronics and Biomedical Robotics, the Journal of Micro-Nano Mechatronics, and the IEEE Robotics and Automation Magazine. He has chaired several international workshops and conferences, has served as the head of the Department of Mechanical and Process Engineering from 2005-2007, and is currently the Chairman of the ETH Electron Microscopy Center (EMEZ).

Eingeladen von: Prof. Dr.-Ing. habil. Sergej Fatikow

Weitere Kolloquiumstermine sind im WWW abrufbar.