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IEEE Monmouth University Student Branch (Software Engineering)

Presents

Autonomous Ground Robots

By

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Abstract

We all would like to have cars that could drive themselves safely while we relax and read the newspaper. The military would like vehicles that could navigate autonomously on or off road for a wide range of missions. How far are we from achieving these goals?

DARPA has taken the lead in advancing the science and engineering needed to field practical Unmanned Ground Vehicles (UGVs). Some of this effort was showcased in the DARPA Grand Challenge and Urban Challenge events. There have also been large DARPA programs that have had less public exposure, but nevertheless have made major contributions to autonomous UGV navigation and locomotion.

From 2003 to 2007, I was fortunate to be a Program Manager at DARPA with primary responsibility for many of DARPA's UGV efforts. In this talk, I will give an overview of the state of the field and review the progress of recent years. An emphasis of my DARPA programs was the application of machine learning and rapid adaptation to UGV tasks; I will discuss how this approach played out in the LAGR, UPI and Learning Locomotion programs. Finally, I will describe additional research challenges that must be overcome before a UGV is likely to drive itself by your front door.

About the Speaker

Larry Jackel is President of North-C Technologies, where he does professional consulting. From 2003-2007 he was a DARPA Program Manager in the IPTO and TTO offices. He conceived and managed programs in Universal Network-Based Document Storage and in Autonomous Ground Robot navigation and Locomotion. For most of his scientific career, Jackel was a manager and researcher in Bell Labs and then AT&T Labs. He has created and managed research groups in Microscience and Microfabrication, in Machine Learning and Pattern Recognition, and in Carrier-Scale Telecom Services. Jackel holds a PhD in Experimental Physics from Cornell University with a thesis in superconducting electronics. He is a Fellow of the American Physical Society and the IEEE.

Date: Monday, April 28, 2008

Dinner: 6:00 PM

Presentation: 6:45 PM

Location: Magill Commons Club Dining Room,
Monmouth University, West Long Branch, NJ 07764

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