ITS SEMINAR

CONTROL, OPTIMIZATION AND SIMULATION OF INTELLIGENT TRANSPORTATION SYSTEMS

Co-sponsored by the Henry Samueli School of Engineering and the California Institute for Telecommunications and Information Technology -- Cal-(IT)² *

Dr. Jia Lei *

FRIDAY, APRIL 25, 2003
2:00 p.m. - 3:00 p.m.
McDonnell-Douglas Engineering Auditorium

The United States has one of the best surface transportation systems in the world. However, due to increasing travel demand and limited resources, the quality and safety of our lives and environment have been eroded by transportation system congestion. To solve these problems, various approaches using computers, control and communication have been proposed under the general title of intelligent transportation systems (ITS). This presentation will focus on two control and optimization problems: decentralized multi-destination dynamic routing and hybrid real-time intersection control. Dr. Lei will show how traffic control and routing problems can be solved from an electrical engineering perspective. Different modern control approaches such as decentralized, optimal and hybrid control, are applied to these programs. The talk will conclude with a brief discussion and demonstration of VATSIM, a vehicle and traffic simulator developed at The Ohio State University.

Dr. Jia Lei was born in Sichuan, China. She received her B.S. and M.S. degrees in electrical engineering with a major in controls from Zhejiang University in 1994 and 1997, respectively. In 2001, she obtained a Ph.D. degree in electrical engineering from The Ohio State University. Her Ph.D. research was focused on control, optimization and simulation of intelligent transportation systems (ITS). In 2001-2002, she worked at Bell Labs as a member of the technical staff where she conducted research on communication network planning and optimization. Her current research interests are transportation system modeling, traffic and vehicle control, vehicle navigation systems and control problems in communication systems.

*Dr. Lei is a candidate for the Cal(IT)² faculty position in Intelligent Transportation Systems and Telematics.