

Department of Mathematical and Physical Sciences Presents

The 2008 Colloquium

When: Thursday, Feb 7, 2008, 4:00-5:00pm

Where: LBV Room 219, TAMIU

Free and Open to Public

Fethi Belkhouche, Ph.D.

Assistant Professor of Systems Engineering, TAMIU

Kinematics-Based Methods for Robotics Applications

Abstract

Navigation in dynamic environments, collision course detection and cooperative aspects between robots are important topics in the field of mobile robotics. Various methods have been suggested to solve these problems. In this presentation, solutions based on kinematics methods are discussed. Kinematics-based methods combine the relative kinematics equations with various geometric aspects. These methods are used for wheeled mobile robots and unmanned air vehicles as well. Linear and nonlinear path planning functions designed to drive the robot to a desired final configuration under the nonholonomic constraints are derived. These functions are used with other navigation laws in surveillance, tracking and interception problems. They are reactive methods and allow to model animal-inspired strategies and some of the most sophisticated tracking algorithms.

Refreshment Starts at 3:30pm

For additional Information, contact Dr. T. Jin. (tjin@tamiu.edu) or (956)326-2582 (office)