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Automatic
Control and
Systems
Engineering

The Department of Automatic Control & Systems Engineering
is pleased to announce the following seminar:

Two Wheel Balancing Robot and Bicycle Type System: Modelling and Control Approach

Dr Cristina Budaciu

*Department of Automatic Control and Applied Informatics
Gheorghe Asachi Technical University of Iasi*

Wednesday, 31 May 2017 at 14:00
LT02, Sir Henry Stephenson Building

Abstract

Two complex systems are analyzed and control approaches are given. Two Wheel Balancing Robot usually refers as Inverted Pendulum is a robot built using Lego Mindstorms kit which is mechanical unstable in its standing position. Balancing robot needs a balancing control which requires an angle value to be used as tilt feedback. In order to real time control the robot, the mathematical model is presented. The second system is a Bicycle Lego Mindstorms robot. The dynamic description of the bicycle is done using a minimal set of dynamic equations that describes the orientation of the body. An LQR controller assures stability of the bicycle by steering. The project is enjoyable both to students and researchers because it covers a wide range of knowledge from analytical, computational and experimental point of view.

Biography

Cristina Budaciu received the Ph.D. degree in 2009 from the Dept of Automatic Control and Applied Informatics at the Gheorghe Asachi Technical University of Iasi, Romania. Since 2012 Cristina has been an Assistant Professor at the Gheorghe Asachi Technical University of Iasi, Romania.

Cristina's research interests include modelling, control and applications including robotics.