

CEIES Short Course



Speaker: Prof. Wei Ren

Department of Electrical and Computer Engineering,
University of California, Riverside, USA

Highly Cited Distinguished Adjunct Professor
Center of Excellence in Intelligent Engineering Systems
King Abdulaziz University

Session	Day	Date	Time
First	Tuesday	3/2/2015	11:00 – 12:15
Second	Tuesday	3/2/2015	13:00 – 14:20
Third	Wednesday	4/2/2015	11:00 – 12:15
Fourth	Wednesday	4/2/2015	13:00 – 14:20

Venue: Engineering Building, Second floor,
Room 24C28 (ECE Seminar Room)

Title

Cooperative Control of Multi-agent Systems

Abstract

While autonomous agents that perform solo missions can yield significant benefits, greater efficiency and operational capability will be realized from teams of autonomous agents operating in a coordinated fashion. Potential applications for cooperative control of multi-agent systems include environmental monitoring, search and rescue, space-based interferometers, hazardous material handling, and combat, surveillance, and reconnaissance systems. Cooperative control of multi-agent systems places high demands on features such as low cost, high adaptivity and scalability, increased flexibility, great robustness, and easy maintenance. To meet these demands, the trend is to design distributed coordination algorithms that rely on only local interaction to achieve global group behavior.

The objective of this short course is to introduce some recent results in the field of cooperative control of multi-agent systems with emphasis on distributed coordination. Distributed coordination of multi-agent systems has been a hot area in controls and robotics in the past decade. Topics covered in the short course include overview of recent research on cooperative control, consensus seeking, motion coordination, cooperative estimation, and cooperative optimization in a distributed context.

ALL ARE CORDIALLY INVITED