CECS
CENTER FOR EMBEDDED & CYBER-PHYSICAL SYSTEMS
UNIVERSITY OF CALIFORNIA · IRVINE

CECS Seminar

"Perception/Control Co-Design for Autonomous Vehicles"



Marilyn Wolf

Elmer E. Koch Professor of Engineering
at the University of Nebraska - Lincoln

Monday, November 9th
2:00-3:00 p.m.
Location: EH 2430

Abstract:

Perception is a critical computational task in autonomous vehicles. Autonomous vehicles place stringent and somewhat conflicting demands on perception systems: high accuracy, low latency, and performance on limited computational resources. The conflict between these requirements is particularly acute in the case of unmanned aerial vehicles (UAVs). This talk will describe two related efforts on efficiency and accuracy in perception for autonomous vehicles. Work with Krishna Muuva and Justin Bradley of UNL looks at UAV-UAV tracking. We show that tracking performance saturates above a given level of perceptual accuracy. Work with Deep Samal, Thomas Walton, and Dung Tran of UNL builds a Markovian model for perception errors and shows their effect on tracking.

Biography:

Marilyn Wolf is Elmer E. Koch Professor of Engineering at the University of Nebraska – Lincoln where she served as Founding Director of the School of Computing. She received her BS, MS, and PhD in electrical engineering from Stanford University in 1980, 1981, and 1984, respectively. She was with AT&T Bell Laboratories from 1984 to 1989. She was on the faculty of Princeton University from 1989 to 2007 and was Farmer Distinguished Chair at Georgia Tech from 2007 to 2019. Her research interests include cyber-physical systems, embedded computing, embedded video and computer vision, and VLSI systems. She has received the IEEE Kirchmayer Graduate Education Award, the IEEE Computer Society Goode Memorial Award, the ASEE Terman Award, the IEEE Circuits and Systems Society Education Award, and the ACM SIGDA Distinguished Service Award. She is a Fellow of the IEEE and ACM and an IEEE Computer Society Golden Core member.

Hosted By: Prof. Mohammad Al Faruque