Distinguished Lectures
Spring 2022

Colorado State University's Information Science and Technology Center (ISTeC) *presents two lectures by*

Dr. Marilyn Wolf
Elmer E. Koch Professor of Engineering
School of Computing
University of Nebraska–Lincoln

ISTeC Distinguished Lecture

In conjunction with the Department of Electrical and Computer Engineering and Department of Computer Science Seminar Series

Safe and Secure Cyber–Physical and Internet–of–Things (IoT) Systems

Monday, April 25, 2022
Reception with refreshments: 10:30 a.m.
Lecture: 11:00 a.m.–12:00 noon
Computer Science Building, CSB 130

Department of Electrical and Computer Engineering Seminar Series
Sponsored by ISTeC

Perception and Computational Efficiency for Autonomous Vehicles

Monday, April 25, 2022
Lecture: 4:00–5:00 p.m.
Lory Student Center Room 324

Abstracts

Safe and Secure Cyber–Physical and Internet–of–Things Systems

Cyber–physical systems (CPS) and Internet–of–Things (IoT) systems connect computers to the physical world. CPS and IoT systems are at the heart of our civilization: infrastructure, logistics, medicine. Both the physical safety and information security of these systems is required for continued functioning of these critical systems. Safety and security, while traditionally separate disciplines, are intertwined in CPS and IoT systems. Information security measures are inadequate to properly protect these systems. This talk, based on work with Dimitrios Serpanos, outlines safety and security issues and proposes some approaches.

Perception and Computational Efficiency for Autonomous Vehicles

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) but is also true of ground vehicles. This talk will describe two related efforts to improve and manage efficiency 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 and Saibal Mukhopodhyay of Georgia Tech uses a closed-loop system to manage sensors.

Speaker Biography

Marilyn Wolf is Elmer E. Koch Professor of Engineering and Director of the School of Computing at the University of Nebraska–Lincoln. 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 included embedded computing, embedded video and computer vision, and VLSI systems. She has received the IEEE Kirchmayer Graduate Teaching Award, the IEEE Computer Society Goode Memorial Award, the ASEE Terman Award and IEEE Circuits and Systems Society Education Award. She is a Fellow of the IEEE and ACM and an IEEE Computer Society Golden Core member.

To arrange a meeting with the speaker, please contact Mahdi Nikdast (Mahdi.Nikdast@colostate.edu).