2016-17 Gerald M. Masson Distinguished Lecture Series

Distinguished Lecturer
RUZENA BAJCSY
University of California, Berkeley

TUESDAY, APRIL 11, 2017 • 10:30 AM
Hackerman Hall B-17

"DEVELOPMENT OF KINEMATIC AND DYNAMIC MODELS FOR INDIVIDUAL USING SYSTEM ESTIMATION AND IDENTIFICATION TECHNIQUES"

ABSTRACT: This talk will introduce a kinematic and dynamic framework for creating a representative model of an individual. Building on results from geometric robotics, a method for formulating a geometric dynamic identification model is derived. This method is validated on a robotic arm, and tested on healthy and muscular dystrophy subjects to determine the utility as a clinical tool. In order to capture kinematics of the human body we used Visual observations, either motion capture or the Kinect camera. In order to obtain the dynamical parameters of the individual, we used force plate and force sensors for robot attached to human hand. The work in progress is to use Ultrasound scanner and Acoustic myography in order to estimate the muscle strength.

BIO: Ruzena Bajcsy received the Master's and Ph.D. degrees in electrical engineering from Slovak Technical University, Bratislava, Slovak Republic, in 1957 and 1967, respectively, and the Ph.D. in computer science from Stanford University, Stanford, CA, in 1972. She is a Professor of Electrical Engineering and Computer Sciences at the University of California, Berkeley, and Director Emeritus of the Center for Information Technology Research in the Interest of Science (CITRIS). Prior to joining Berkeley, she headed the Computer and Information Science and Engineering Directorate at the National Science Foundation. Dr. Bajcsy is a member of the National Academy of Engineering and the National Academy of Science Institute of Medicine as well as a Fellow of the Association for Computing Machinery (ACM) and the American Association for Artificial Intelligence.

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