

COLLEGE OF ENGINEERING

Control Seminar



Honoring Elmer Gilbert (1930-2019) and his contributions to Control Systems

Passivity Based CPS Design for Autonomy



PANOS ANTSAKLIS

Professor

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Computer Science and Engineering

Friday, November 1, 2019

3:30 pm – 4:30 pm 1500 EECS Bldg.

ABSTRACT: Panos AntsIn the first part of this talk autonomy will be discussed, metrics that are useful when comparing autonomy levels will be introduced and a functional hierarchical architecture for the control of autonomous systems will be discussed together with the role control systems play in autonomy. In the second part of this talk a powerful methodology for the design of autonomous Cyber-Physical Systems that involves the energy like concepts of Passivity/Dissipativity and uses Passivity Indices will be introduced. CPS Passivation and Distributed Synthesis of local controllers will be discussed.

BIO: Panos Antsaklis is the H.C. & E.A. Brosey Professor of Electrical Engineering at the University of Notre Dame and Concurrent Professor in the Departments of Computer Science and Engineering and of Applied and Computational Mathematics and Statistics. He is a graduate of the National Technical University of Athens, Greece, and holds MS and PhD degrees from Brown University. His research addresses problems of control and automation and examines ways to design control systems that will exhibit high degree of autonomy. His current research focuses on Cyber-Physical Systems and the interdisciplinary research area of control, computing and communication networks, and on hybrid and discrete event dynamical systems.

In addition to publications in journals, conference proceedings, book chapters and encyclopedias, he has co-authored two graduate textbooks on Linear Systems, three research monographs – one on model-based control of networked systems and two on supervisory control of discrete event systems, and has co-edited six books on Intelligent Autonomous Control, Hybrid Systems and Networked Embedded Control Systems.

He is IEEE, IFAC and AAAS Fellow, the 2006 recipient of the Engineering Alumni Medal of Brown University, the 2013 recipient of the Faculty Award of the University of Notre Dame, and holds an Honorary Doctorate from the University of Lorraine in France. He is the Founding President of the Mediterranean Control Association (MCA) and Editor-in-Chief of the journal Foundations and Trends in Systems and Control. He served as the Chair of the Scientific Advisory Board of the Max-Planck-Institute in Magdeburg, Germany for 6 years and as the President of the IEEE Control Systems Society in 1997. He served as the Director of the Center for Applied Mathematics of the University of Notre Dame for 6 years and was the Editor-in-Chief of the IEEE Transactions on Automatic Control for 8 years, 2010-2017.



Questions? Contact: Judi Jones asap@umich.edu