

PANOS ANTSAKLIS

Brief Biography

Panos J. Antsaklis is the *H.Clifford and Evelyn A. Brosey Professor* of Electrical Engineering at the *University of Notre Dame*. He is also Concurrent Professor of the Departments of Computer Science and Engineering and of Applied and Computational Mathematics and Statistics. He served as the Director of the Center for Applied Mathematics of the University of Notre Dame from 1999 to 2005. He is a graduate of the *National Technical University of Athens* (NTUA), Greece, and holds MS and PhD (1977) degrees from *Brown University*. He also holds an Honorary Doctorate (*Docteur Honoris Causa*) from the *University of Lorraine*, France (2012).

Research: His research focuses on Cyber Physical Networked Embedded Systems and addresses systems, control and automation problems in the interdisciplinary research area of Control, Computing and Communication Networks. This research examines ways to design engineering systems that will exhibit high degrees of autonomy in performing useful tasks. High autonomy and ways to achieve it has been the driving force and the central theme of his research on the control of complex systems. Application areas include transportation, power, manufacturing, and chemical process systems, as well as computer and communication networks. His work includes analysis of behavior and control strategies for complex autonomous, intelligent, learning and reconfigurable systems. It is based on mathematical and data models of continuous, hybrid and discrete event dynamical systems. His recent work on a general theory for the analysis and robust design of Cyber-Physical Systems uses the energy like concepts of passivity (passivity indices) and dissipativity (See **Research** on this website)

Publications: He has published extensively in the area of Systems and Control, in linear feedback systems, autonomous intelligent control systems, discrete event and hybrid systems, in networked control systems and in cyber-physical systems (600 publications, 30,000 citations, h-index 78; see **Publications** on this website).

He has authored three graduate textbooks:

- *Linear Systems*
(Springer 2006; with A.N. Michel). <https://www.springer.com/us/book/9780817644345>
- *A Linear Systems Primer*
(Springer 2007; with A.N. Michel). <https://www.springer.com/us/book/9780817644604>
- *Hybrid Dynamical Systems: Fundamentals and Methods*
(Springer 2021; with Hai Lin) <https://www.springer.com/us/book/9783030787295>

He has authored three research monographs:

- *Model-Based Control of Networked Systems*
(Springer 2014; with E. Garcia and L. Montestruque <https://www.springer.com/us/book/9783319078021>)
- *Supervisory Control of Concurrent Systems: A Petri Net Structural Approach*
(Springer 2006; with M.V. Iordache) <https://www.springer.com/us/book/9780817643577>
- *Supervisory Control of Discrete Event Systems using Petri Nets*
(Springer 1998; with J.O. Moody) <https://www.springer.com/us/book/9780792381990>

He has edited six books:

- *An Introduction to Intelligent and Autonomous Control*
(Kluwer Academic 1993 with K.M.Passino)
- *Hybrid Systems II*
(Springer-Verlag 1995; with W. Kohn, A. Nerode and S. Sastry)
- *Hybrid Systems IV*
(Springer-Verlag 1997; with W. Kohn, A. Nerode and S. Sastry)

- *Hybrid Systems V* (Springer-Verlag 1999; with W. Kohn, M. Lemmon, A. Nerode and S. Sastry)
- *Stability and Control of Dynamical Systems with Applications: A Tribute to Anthony N. Michel* (Springer 2003; with D. Liu)
<https://www.springer.com/us/book/9780817632335>
- *Networked Embedded Sensing and Control* (Springer 2006; with P. Tabuada)
<https://www.springer.com/us/book/9783540327943>

He was Guest Editor of the *Special Issue on Networked Control Systems* of the IEEE Transactions on Automatic Control (with John Baillieul, September 2004) and of the *Special Issue on Networked Control Systems Technology* of the Proceedings of the IEEE (with John Baillieul, January 2007). He was Guest Editor of special issues on *Hybrid Control Systems* in the IEEE Transactions on Automatic Control (with A. Nerode; 1998), in the Journal of Discrete Event Dynamic Systems (with M. Lemmon; 1998), and was the Guest Editor of the *Special Issue on Hybrid Systems* in the Proceedings of the IEEE in July 2000. He was the Guest Editor of the 1990 and 1992 *Special Issues on Neural Networks in Control Systems* of the IEEE Control Systems magazine (CSM) and the Guest Editor of the 1995 *Special Issue on Intelligence and Learning* in the IEEE CSM.

Professional Activities: He served as the 1997 President of the IEEE Control Systems Society (CSS) and as the Editor-in-Chief of the IEEE Transactions on Automatic Control (TAC) for 8 years, 2010-17. He is the Editor-in-Chief (with A. Astolfi) of *Foundations and Trends in Systems and Control*, (Now Publishers, 2012 to present). He is the Founding President of the Mediterranean Control Association (MCA; President 1998 to present). MCA is the parent organization of the annual Mediterranean Conference on Control and Automation (MED attracts over 250 participants; now, in 2021, in its 29th year). He was a founder of MED. He served as Chair of the Scientific Advisory Board (SAB) of the Max-Planck-Institut für Dynamik Komplexer Technischer Systeme, Magdeburg, Germany (2008-10, 2010-12) where he has been a SAB member since 2002. In 2006-2007 he was member of the subcommittee on Networking and Information Technology of the President's Council of Advisors for Science and Technology (PCAST), that advises the President of the United States on Science and Technology federal policy issues regarding technology, scientific research priorities, and math and science education.

Recognitions: He is *Fellow of the Institute of Electrical and Electronics Engineers*, IEEE (1991), *Fellow of the International Federation of Automatic Control*, IFAC (2010) and *Fellow of the American Association for the Advancement of Science*, AAAS (2011). He is a *Distinguished Lecturer* of the IEEE Control Systems Society, a recipient of the *IEEE Distinguished Member Award* of the Control Systems Society, and an *IEEE Third Millennium Medal* recipient.

He is the recipient of the 2006 *Engineering Alumni Medal of Brown University*, Providence, Rhode Island. He was awarded an Honorary Doctorate (*Docteur Honoris Causa*) by the University of Lorraine, France in 2012.

At the University of Notre Dame he is the recipient of the 2013 Faculty Award and the recipient of the 2020 Research Achievement Award. He has also been the recipient of several teaching awards.

URL: www.nd.edu/~pantsaki