WAC 2021

14th Bi-annual Congress

VIRTUAL EVENT

No. TBD

James M. Tien
University of Miami, USA
Time: TBD
Day:TBD August 2021
Chair: TBD
Venue: Virtual

Convergence to Real-Time Decision Making

ABSTRACT: Real-time decision making reflects the convergence of several digital technologies, including those concerned with the promulgation of artificial intelligence and other advanced technologies that underpin real-time actions. More specifically, real-time decision making can be depicted in terms of three converging dimensions: Internet of Things; decision making; and real-time. The Internet of Things include tangible goods, intangible services, servgoods, and connected servgoods; decision making includes model-based analytics (before 1990), information-based Big Data (since 1990), and example-based artificial intelligence (since 2000), and it is bolstered by the evolving technologies of sensing (i.e., capturing data), processing (i.e., applying real-time analytics), reacting (i.e., making real-time decisions), and learning (i.e., employing deep neural networks); and real-time includes mobile networks, autonomous vehicles, and artificial general intelligence. Central to decision making, especially real-time decision making, is the concept of a servgood, which the author introduced in an earlier paper (2012); it can be thought of as a physical good or product enveloped by a services layer that renders the good smarter or more adaptable and customizable for a particular purpose or use. Adding another layer of communication sensors could further enhance its smartness, connectedness and adaptiveness. Such connected servgoods constitute a solid foundation for the advanced products of tomorrow which can further exhibit their growing intelligence through real-time decisions.

Bio: Jamea M. Tien received the BEE from Rensselaer Polytechnic Institute (RPI) and the SM, EE and PhD from the Massachusetts Institute of Technology. He has held leadership positions at Bell Telephone Laboratories, at the Rand Corporation, and at Structured Decisions Corporation. He joined the Department of Electrical, Computer and Systems Engineering at RPI in 1977, became Acting Chair of the department, asked to lead a unique interdisciplinary Department of Decision Sciences and Engineering Systems as its founding Chair, and twice served as the Acting Dean of Engineering. In 2007, he was recruited by the University of Miami to be a Distinguished Professor and Dean of its College of Engineering; effective 2016, he stepped down from the Dean's position and remains a Distinguished Professor. He has been awarded the IEEE Joseph G. Wohl Outstanding Career Award, the IEEE Major Educational Innovation Award, the IEEE Norbert Wiener Award, and the IBM Faculty Award. He is also an elected member of the U. S. National Academy of Engineering.