

## Title

### **Discontinuous Control Systems: Past, Present and Future**

## Speaker

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## Abstract

Discontinuous control is a very effective approach to deliver fast and efficient actions to achieve desirable control objectives. However, its analysis and design present some of the most difficult mathematical and practical problems. Various schools of thoughts, such as Sliding Mode Control and Switched Control, have been developed over the last several decades. Yet, there have been still a number of challenges across the spectrum of theory and applications concerning discontinuous control systems.

In this talk, we will first introduce the basics of discontinuous control systems. We will then examine the major schools of thoughts in dealing with discontinuity and their analysis and design methodologies, exploring inherent properties that distinguish them from the continuous control systems and outlining critical issues that hinder their developments. Some typical applications will be outlined and future perspectives in theory and applications will be discussed.

## Biography



Professor Xinghuo Yu is an Associate Deputy Vice-Chancellor and Distinguished Professor of Electrical and Electronic Engineering at Royal Melbourne Institute of Technology (RMIT University), Melbourne, Australia. He is the Junior Past President of IEEE Industrial Electronics Society. He received BEng and MEng degrees from the University of Science and Technology of China, Hefei, China, in 1982 and 1984, and PhD degree from Southeast University, Nanjing, China in 1988, respectively.

His main research areas include control systems, intelligent and complex systems, energy systems engineering. He received a number of awards and honours for his contributions, including 2018 MA Sargent Medal from Engineers Australia, 2018 Australasian AI Distinguished Research Contribution Award from Australian Computer Society, and 2013 Dr.-Ing. Eugene Mittelmann Achievement Award from IEEE Industrial Electronics Society. He is a Fellow of the IEEE, Engineers Australia, Australian Computer Society, and Australian Institute of Company Directors.