

# 学术报告会

时间：2016年3月16日(周三)10:00

地点：电院群楼2-410会议室

## Random Sketch and Validate for Learning from Large-Scale Data

**Prof. Georgios B. Giannakis**

**The Univ. of Minnesota, USA**



### Abstract:

Robotics research, development, and commercialization are booming in recent years due to the rise of manufacturing industries in the world and particularly in China. China now has more than 50% of industrial robots. We researchers in robotics, especially those in China, are responsible for pushing our inventions out of laboratories to benefit the industry and the society as a whole. History has proven that only those elite individuals who have generated marketable robotic products can bring significant impacts to the field of robotics. While industrial robots are mature and dominated by a handful of Japanese and German companies, service robots have a broad scope of applications waiting for robots to conquer. Nevertheless, barrier for both are still high. For industrial robots, the future is in critical robotic components, including motor, speed reducer, and battery. Particularly the first two cost more than 60% of the entire robot. For service robot a simple, reliable, and straightforward “killing” application is the key. The talk further uses speed reducer as an example to illustrate the author’s vision how a rising country such as China to penetrate the market of industrial robots and become competitive. A new concept of motor and speed reducer modularized robotic joint is finally introduced.

### Biography:

**Georgios B. Giannakis** received his Diploma in Electrical Engr. from the Ntl. Tech. Univ. of Athens, Greece, 1981. From 1982 to 1986 he was with the Univ. of Southern California (USC), where he received his MSc. in Electrical Engineering, 1983, MSc. in Mathematics, 1986, and Ph.D. in Electrical Engr., 1986. Since 1999 he has been a professor with the Univ. of Minnesota, where he now holds an ADC Chair in Wireless Telecommunications in the ECE Department, and serves as director of the Digital Technology Center. His general interests span the areas of communications, networking and statistical signal processing – subjects on which he has published more than 385 journal papers, 655 conference papers, 25 book chapters, two edited books and two research monographs (h-index 117). Current research focuses on big data analytics, wireless cognitive radios, network science with applications to social, brain, and power networks with renewables.. He is the (co-) inventor of 22 patents issued, and the (co-) recipient of 8 best paper awards from the IEEE Signal Processing (SP) and Communications Societies, including the G. Marconi Prize Paper Award in Wireless Communications. He also received Technical Achievement Awards from the SP Society (2000), from EURASIP (2005), a Young Faculty Teaching Award, the G. W. Taylor Award for Distinguished Research from the University of Minnesota, and the IEEE Fourier Technical Field Award (2015). He is a Fellow of the IEEE and EURASIP, and has served the IEEE in a number of posts including that of a Distinguished Lecturer for the IEEE-SPS.