COLLEGE OF ENGINEERING AND COMPUTER SCIENCE

FLORIDA ATLANTIC UNIVERSITY

Distinguished Lecture Series

College Lecture in Partnership with I-SENSE

Georgios B. Giannakis, Ph.D.

Professor, ADC Chair in Wireless Telecommunications, and Director, Digital Technology Center, Department of Electrical and Computer Engineering
University of Minnesota

ADAPTIVE SKETCHING AND VALIDATION FOR LEARNING FROM BIG DATA

Fri., Dec. 8
1:30 to 2:30 p.m., 777 Glades Road, EE 106
FAU Boca Raton Campus

Videoconferenced to the Dania Beach, SeaTech Site, ST 250

Abstract

We live in an era of data deluge. Pervasive sensors collect massive amounts of information on every bit of our lives, churning out enormous streams of raw data in various formats. Mining information from unprecedented volumes of data promises to limit the spread of epidemics and diseases, identify trends in financial markets, learn the dynamics of emergent social-computational systems, and also protect critical infrastructure including the smart grid and the Internet's backbone network. While Big Data can be definitely perceived as a big blessing, big challenges also arise with large-scale datasets. This talk will put forth novel algorithms and present analysis of their performance in extracting computationally affordable yet informative subsets of massive datasets. Extraction will effected through innovative tools, namely adaptive censoring, random subset sampling (a.k.a. sketching), and validation. The impact of these tools will be demonstrated in machine learning tasks as fundamental as (non)linear regression, classification, and clustering of high-dimensional, large-scale, and dynamic datasets.

Biography

Georgios B. Giannakis, (Fellow'97) received his diploma in Electrical Engineering from the National Technical University of Athens, Greece, 1981. From 1982 to 1986 he was with the University of Southern California (USC), where he received his MSc. in Electrical Engineering, 1983, MSc. in Mathematics, 1986, and Ph.D. in Electrical Engineering, 1986. He was with the University of Virginia from 1987 to 1998, and since 1999 he has been a professor with the Univeristy of Minnesota, where he holds a Chair in Wireless Telecommunications, a University of Minnesota McKnight Presidential Chair in ECE, 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 400 journal papers, 700 conference papers, 25 book chapters, two edited books and two research monographs (h-index 128). 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 30 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 inaugural IEEE Fourier Technical Field Award (2015). He is a Fellow of EURASIP, and has served the IEEE in a number of posts including that of a Distinguished Lecturer for the IEEE-SP Society.

COLLEGE OF ENGINEERING & COMPUTER SCIENCE
Florida Atlantic University

eng.fau.edu

I-SENSE
Division of Research
Florida Atlantic University

isense.fau.edu

For more information please send email to info@eng.fau.edu.