



SPC Lab, IEEE Greece Signal Processing Chapter, UPatras - WCSN

ΠΡΟΣΚΛΗΣΗ ΣΕ ΔΙΑΛΕΞΗ

Την Πέμπτη 12 Ιουνίου 2014, στις 12:00μμ, στην Αίθουσα Β.4 του Τμήματος Μηχανικών Η/Υ & Πληροφορικής (κτίριο Β), θα πραγματοποιηθεί διάλεξη από τον Καθηγητή κ. Γεώργιο Γιαννάκη. Ο κ. Γ. Γιαννάκης είναι Endowed Chair Professor του Τμήματος ΕCE του Πανεπιστημίου της Μινнесότα, Διευθυντής του Digital Technology Center και IEEE Fellow.

Το θέμα της διάλεξης είναι:

"Signal Processing for Big Data"

Η διάλεξη συνδιοργανώνεται από το Εργαστήριο Σημάτων και Τηλεπικοινωνιών του ΤΜΗΥΠ, το IEEE Signal Processing Society Greece Chapter και το Ενδοπανεπιστημιακό Δίκτυο Έρευνας και Εφαρμογών σε Ασύρματα Δίκτυα Επικοινωνιών & Αισθητήρων.

Ακολουθεί περίληψη της ομιλίας και σύντομο βιογραφικό του ομιλητή.

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Τίτλος διάλεξης: Signal Processing for Big Data

Περίληψη:

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. The sheer volume of data makes it often impossible to run analytics using a central processor and storage, and distributed processing with parallelized multi-processors is preferred while the data themselves are stored in the cloud. As many sources continuously generate data in real time, analytics must often be performed "on-the-fly" and without an opportunity to revisit past entries. Due to their disparate origins, massive datasets are noisy, incomplete, prone to outliers, and vulnerable to

cyber-attacks. These effects are amplified if the acquisition and transportation cost per datum is driven to a minimum. Overall, Big Data present challenges in which resources such as time, space, and energy, are intertwined in complex ways with data resources. Given these challenges, ample signal processing opportunities arise. This tutorial lecture outlines ongoing research in novel models applicable to a wide range of Big Data analytics problems, as well as algorithms to handle the practical challenges, while revealing fundamental limits and insights on the mathematical trade-offs involved.

Σύντομο βιογραφικό ομιλητή:

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 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 365 journal papers, 615 conference papers, 20 book chapters, two edited books and two research monographs (h-index 108). Current research focuses on sparsity and big data analytics, wireless cognitive radios, mobile ad hoc networks, renewable energy, power grid, gene-regulatory, and social networks. 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, and the G. W. Taylor Award for Distinguished Research from the University of Minnesota. 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.

Πληροφορίες για τη διάλεξη:

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