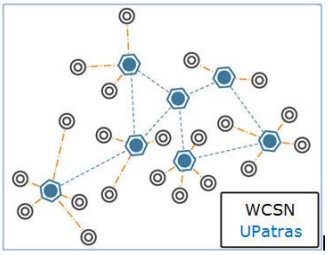

SPC Lab, IEEE Greece Signal Processing Chapter, UPatras - WCSN

ΠΡΟΣΚΛΗΣΗ ΣΕ ΔΙΑΛΕΞΗ

Την Πέμπτη 27 Ιουνίου 2013, στις 11:00πμ, 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 ECE του Πανεπιστημίου της Μιννεσότα και Διευθυντής του Digital Technology Center. Θεωρείται, διεθνώς, ως ένας από τους πλέον διακεκριμένους επιστήμονες με θεμελιώδες έργο στις επιστημονικές περιοχές της Επεξεργασίας Σημάτων και των Δικτύων Επικοινωνίας.

Το θέμα της διάλεξης είναι:

"Sparsity and Low Rank for Robust Social Data Analytics and Networking"

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.

Τίτλος διάλεξης: Sparsity and Low Rank for Robust Social Data Analytics and Networking

Περίληψη:

The information explosion propelled by the advent of personal computers, the Internet, and the global communications has rendered statistical learning from `Big Data' increasingly important. Along with data adhering to postulated models, present in large volumes of data are also those that do not - what are referred to as outliers or anomalies. In this talk, I will start with an approach to outlier-resilient principal component analysis, which establishes a neat link between the seemingly unrelated notions of sparsity and robustness to outliers, even when the signals involved are not sparse. I will argue that controlling sparsity of model residuals leads to statistical learning algorithms that are computationally affordable and universally robust. The impact of these ideas will be demonstrated in applications as diverse as identification of aberrant responses in personality assessment surveys, and unveiling communities in social networks, as well as intruders from video surveillance data. In the

second part of the talk, I will switch focus towards the important task of unveiling and mapping-out network anomalies given link-level traffic measurements. Leveraging the low intrinsic-dimensionality of end-to-end network flows and the sparse nature of anomalies, I will show how to construct an estimated map of anomalies in real time to aid in monitoring the network health state. If time allows, I will finally highlight additional application domains that include predicting network-wide path latencies, and load curve cleansing and imputation -- a critical task in green grid analytics and energy management with renewables.

Σύντομο βιογραφικό ομιλητή:

G. B. Giannakis (IEEE Fellow'97) 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 340 journal papers, 560 conference papers, 20 book chapters, two edited books and two research monographs (h-index > 100). Current research focuses on compressive sensing, cognitive radios, cross-layer designs, wireless sensors, social and power grid networks. He is the (co-)inventor of 21 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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