ΕΘΝΙΚΟ ΜΕΤΣΟΒΙΟ ΠΟΛΥΤΕΧΝΕΙΟ
ΣΧΟΛΗ ΗΛΕΚΤΡΟΛΟΓΩΝ ΜΗΧΑΝΙΚΩΝ ΚΑΙ ΜΗΧΑΝΙΚΩΝ ΥΠΟΛΟΓΙΣΤΩΝ
ΤΟΜΕΑΣ ΕΠΙΚΟΙΝΩΝΙΩΝ, ΗΛΕΚΤΡΟΝΙΚΗΣ & ΣΥΣΤΗΜΑΤΩΝ ΠΛΗΡΟΦΟΡΙΚΗΣ

ΑΝΑΚΟΙΝΩΣΗ

Σειρά διαλέξεων με θέμα:

Learning with Kernel Methods and Applications

Ο κύριος Θεόδωρος Τραφαλής, Καθηγητής του Πανεπιστημίου της Οκλαχόμα, ΗΠΑ, θα δώσει σειρά διαλέξεων με θέμα «Learning with Kernel Methods and Applications». Οι δύο πρώτες διαλέξεις θα δοθούν με βάση το παρακάτω πρόγραμμα και περιεχόμενο:

Διάλεξη	Χρόνος - Τόπος	Τίτλος - Περίληψη
1^η	**11/12/2014**, Πέμπτη Ώρα 12:30-14:30 Αίθουσα 003, Νέο Κτήριο Ηλεκτρολόγων	**Learning with Kernel Methods: an introduction** Kernel methods have become a well established tool within machine learning. They have been used across a wide range of applications such as recognizing handwritten digits, face identification, text categorization, bioinformatics, database marketing, manufacturing and weather prediction. In this lecture I will give an introductory overview of this subject. I start with Parzen's windows as a motivation and continue with Support Vector Machines (SVMs) for performing binary classification. I also discuss SVMs for regression.
2^η	**18/12/2014**, Πέμπτη Ώρα 12:30-14:30 Αίθουσα 003, Νέο Κτήριο Ηλεκτρολόγων	**Center Based Kernel Machines and Applications** Determining the Support Vector Machine (SVM) solution can be explained as finding the center of the largest hypersphere that can be inscribed in the set of consistent hypotheses called the version space (dual representation in the weight space). However, this solution is not accurate if the version space is asymmetric. Several approaches have been investigated to use other centers of the version space that can result in better generalization performance such as the Bayes point and analytical center machine (Trafalis and Malyscheff, 2002). In this lecture, we discuss an overview of center kernel based algorithms for solving regression and multiclass classification problems. Special emphasis is given to the p-Center method. Applications are also discussed to active learning with special emphasis to weather data.

Σύντομο Βιογραφικό Καθ. Θεόδωρου Τραφαλή

Theodore B. Trafalis, PhD, is a Professor at the School of Industrial and Systems Engineering at the University of Oklahoma, USA and adjunct professor in the School of meteorology. This year is on a sabbatical, visiting the school of Electrical and Computer Engineering, National Technical University of Athens, Greece. He earned his BS in mathematics from the University of Athens, Greece, his MS in Applied Mathematics, MSIE, and PhD in Operations Research from Purdue University. He is a member of INFORMS, SIAM, International Society of Multiple Criteria Decision Making, and the International Society of Neural Networks. He has been listed in several Who's Who biographies such as in the 1993/1994 edition of Who's Who in the World. He was a visiting Assistant Professor at Purdue University (1989-1990), an invited Research Fellow at Delft University of Technology, Netherlands (1996), a visiting Associate Professor at Blaise Pascal University, France, and at the Technical University of Crete (1998). He was also an invited visiting Associate Professor at Akita Prefectural University, Japan (2001). The academic year 2006-2007 was on a sabbatical at the National Center for Scientific Research "Demokritos", Institute of Informatics and Telecommunications, Computational Intelligence Laboratory (CIL), Athens, Greece. In June 2011 he was invited researcher at the Institute of Applied Mathematics, University of Toulouse, France. In March 2014 he was invited professor at the Department of Computing, Unitec, Auckland, New Zealand. His research interests include: operations research/management science, mathematical programming, interior point methods, multiobjective optimization, control theory, artificial neural networks, kernel methods, evolutionary programming data mining, global optimization and weather applications. He has published more that one hundred articles in journals, conference proceedings, edited books, made over one hundred technical presentations, and received several awards for his papers. In 2004 he received the Regents Award at the University of Oklahoma for his research activities. He has been funded through National Science Foundation (NSF), NOAA, Office of the Army and received the NSF Research Initiation Award in 1991. In 2006 he was the editor of a special issue in Support Vector Machines for the journal of Computational Management Science. He also co-edited a special issue in "Learning from Data" for the same journal. In 2014 he co-edited a special issue in data mining and informatics for Annals of Operations Research. He has coauthored a research monograph with Springer under the title "Robust Data Mining" that was published in 2013. Prof. Trafalis currently serves as the chief editor of Intelligent Control and Automation and an associate editor for the Journal of Computational Management Science, the Journal of Heuristics, and several other journals. In addition he has been on the Program Committee of several international conferences in the field of intelligent systems, data mining and optimization. He was also co-organizer of the International Conference on the Dynamics of Disasters, Athens, Greece, 2006 and organizer of the 1st International Conference in Industrial Systems and Design Engineering that was held in Athens, Greece, June 2013. This June chaired the 2nd International Conference in Industrial Systems and Design Engineering that was held in Athens, Greece, June 23-26, 2014.