ΠΡΟΣΚΛΗΣΗ σε ΔΙΑΛΕΞΗ (IEEE)

Το Ελληνικό Τμήμα του διεθνούς Ινστιτούτου Ηλεκτρολόγων και Ηλεκτρονικών Μηχανικών (IEEE) σας προσκαλεί στη διάλεξη του

Dr Kay Chen TAN (IEEE Fellow)
Professor, National University of Singapore
IEEE Distinguished Lecturer
Editor-in-Chief: IEEE Transactions on Evolutionary Computation

με θέμα:

"EC AT WORK: OPPORTUNITIES AND CHALLENGES"

Sponsored by the IEEE Computational Intelligence Society (CIS) under its Distinguished Lecturer Program

Η εκδήλωση θα πραγματοποιηθεί τη Δευτέρα 5 Δεκεμβρίου 2016, ώρα 12.00, στην **Αίθουσα Τηλεκπαίδευσης, Ισόγειο Κεντρικής Βιβλιοθήκης ΕΜΠ, Πολυτεχνειούπολη Ζωγράφου.**

<u>Περίληψη της διάλεξης</u>

"EC AT WORK: OPPORTUNITIES AND CHALLENGES"
Evolutionary Computing (EC), which is based on the principles of natural selection and genetic inheritance, is often considered a global optimization methodology with a metaheuristic or stochastic optimization character. It is distinguished by the use of a population of candidate solutions rather than traditional approach of iterating over a single point in the search space. EC is being increasingly applied to many problems, ranging from practical applications in industry to cutting-edge scientific research. The plenary will provide a brief overview of this exciting research field including opportunities and challenges faced in applying EC to a variety of real-world multi-objective problems, such as design automation, robust optimization and logistic application. In particular, a case study involving the estimation of remaining useful life (RUL) for turbofan engines in the area of robust prognostic will be studied. As one of the key enablers of condition-based maintenance, prognostic involves the core task of determining the RUL of the system. The plenary will also present an application of evolutionary deep learning ensembles to improve the prediction accuracy of RUL estimation for turbofan engines.

<u>Βιογραφικό σημείωμα ομιλητή</u>

Dr Kay Chen TAN (IEEE Fellow)

**National University of Singapore
Department of Electrical and Computer
Engineering**

Associate Professor TAN Kay Chen received the B. Eng degree with First Class Honors in Electronics and Electrical Engineering, and the Ph.D. degree from the University of Glasgow, Scotland, in 1994 and 1997, respectively. He is actively pursuing research in artificial/computational intelligence and machine learning, with applications to multi-objective optimization, data analytics, prognostics, BCI, and operational research etc.

Dr Tan has published over 130 journal papers, over 130 papers in conference proceedings, co-authored 5 books including Multiobjective Evolutionary Algorithms and Applications (Springer-Verlag, 2005), Modern Industrial Automation Software Design (John Wiley, 2006; Chinese Edition, 2008), Evolutionary Robotics: From Algorithms to Implementations (World Scientific, 2006; Review), Neural Networks: Computational Models and Applications (Springer-Verlag, 2007), and Evolutionary Multi-objective Optimization in Uncertain Environments: Issues and Algorithms (Springer-Verlag, 2009), co-edited 4 books including Recent Advances in Simulated Evolution and Learning (World Scientific, 2004), Evolutionary Scheduling (Springer-Verlag, 2007), Multiobjective Memetic Algorithms (Springer-Verlag, 2009), and Design and Control of Intelligent Robotic Systems (Springer-Verlag, 2009).

Dr Tan has been an Invited Keynote/Plenary speaker for over 50 international conferences. He was the General Co-Chair for IEEE Congress on Evolutionary Computation 2007 in Singapore and is the General Co-Chair for IEEE World Congress on Computational Intelligence 2016 in Vancouver, Canada. Dr Tan is currently an elected member of AdCom (2014-2016) and is an IEEE Distinguished Lecturer of IEEE Computational Intelligence Society (2011-2013; 2015-2017).

Dr Tan is a Fellow of IEEE. He is also the Editor-in-Chief of IEEE Transactions on Evolutionary Computation. He served as the Editor-in-Chief of IEEE Computational Intelligence Magazine (2010-2013), and currently serves as an Associate Editor / Editorial Board member of over 20 international journals, such as IEEE Transactions on Cybernetics, IEEE Transactions on Computational Intelligence and AI in Games, Evolutionary Computation (MIT Press), European Journal of Operational Research, Neural Computing and Applications, Journal of Scheduling, International Journal of Systems Science, etc.

He is the awardee of the 2012 IEEE Computational Intelligence Society (CIS) Outstanding Early Career Award for his contributions to evolutionary computation in multi-objective optimization. He also received the 2016 IEEE CIS Outstanding TNNLS Paper Award for his paper titled "Rapid Feedforward Computation by Temporal Encoding and Learning with Spiking Neurons". He also received the Recognition Award (2008) from the International Network for Engineering Education & Research (iNEER) for his outstanding contributions to engineering education and research. He was felicitated by the International Neural Network Society (INNS) India Regional Chapter (2014) for his outstanding contributions in the field of computational intelligence.

He was a winner of the NUS Outstanding Educator Awards (2004), the Engineering Educator Awards (2002, 2003, 2005, 2014), the Annual Teaching Excellence Awards (2002, 2003, 2004, 2005, 2006), the Honour Roll Awards (2007), and a Fellow of the NUS Teaching Academy (2009-2012).