【演講公告】

【演講者】：

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【演講時間】：**105年06月08日　下午1點-3點**

【演講地點】：國立中央大學電機系 **E1-124室**

【演講題目】：

MANY-OBJECTIVE EVOLUTIONARY ALGORITHMS FOR OPTIMIZATION AND DECISION-MAKING

【演講內容】

Evolutionary computation is the study of biologically motivated computational paradigms which exert novel ideas and inspiration from natural evolution and adaptation. The applications of population-based heuristics in solving multiobjective optimization problems have been receiving a growing attention. To search for a family of Pareto optimal solutions based on nature-inspiring problem solving paradigms, Evolutionary Multiobjective Optimization Algorithms have been successfully exploited to solve optimization problems in which the fitness measures and even constraints are uncertain and changed over time. When encounter optimization problems with many objectives, nearly all designs performs poorly because of loss of selection pressure in fitness evaluation solely based upon Pareto optimality principle. This talk will survey recently published literature along this line of research-evolutionary algorithm for many-objective optimization. We will also touch upon three additional issues, 1) visualization of population in a high-dimensional objective space throughout the evolution process, 2) a performance metric designed tailored to measure the convergence and diversity in a high-dimensional objective space, and 3) a minimum Manhattan distance approach, equivalent to the knee selection described by a divide and conquer design to multiple criteria decision making in a many-objective optimization problem.

【講者介紹】

Gary G. Yen received the Ph.D. degree in electrical and computer engineering from the University of Notre Dame in 1992. He is currently a Regents Professor in the School of Electrical and Computer Engineering, Oklahoma State University. His research interest includes intelligent control, computational intelligence, evolutionary multiobjective optimization, conditional health monitoring, signal processing and their industrial/defense applications.

Gary was an associate editor of the *IEEE Transactions on Neural Networks* and *IEEE Control Systems Magazine* during 1994-1999, and of the *IEEE Transactions on Control Systems Technology*, *IEEE Transactions on Systems, Man and Cybernetics* and IFAC Journal on *Automatica* and *Mechatronics* during 2000-2010. He is currently serving as an associate editor for the *IEEE Transactions on Evolutionary Computation* and *IEEE Transactions on Cybernetics*. Gary served as Vice President for the Technical Activities, IEEE Computational Intelligence Society in 2004-2005 and is the founding editor-in-chief of the *IEEE Computational Intelligence Magazine*, 2006-2009. He was the President of the IEEE Computational Intelligence Society in 2010-2011 and is elected as a Distinguished Lecturer for the term 2012-2014. He received Regents Distinguished Research Award from OSU in 2009, 2011 Andrew P Sage Best Transactions Paper award from IEEE Systems, Man and Cybernetics Society, 2013 Meritorious Service award from IEEE Computational Intelligence Society and 2014 Lockheed Martin Aeronautics Excellence Teaching award. He is a Fellow of IEEE and IET.