

POSTGRADUATE SEMINAR SERIES

Research Findings Seminar

Topic Title :

Using Multiobjective Optimization to Solve Multimodal Optimization and Constrained Optimization Problems.

Presenter :

Mr. Jing-Yu JI

PhD student of Computing and Decision Sciences

Abstract :

Recent years have witnessed the success of multiobjective optimization. Not only can multiobjective evolutionary algorithms balance all objectives in different situations, but they are also proved to be well suited for black-box problems of which a mathematical formulation of the objective functions is unavailable.

If the other kinds of optimization problems can be well-transformed into a multiobjective optimization problem, it is possible to use various multiobjective optimization techniques directly without introducing auxiliary methods, such as problem-independent local search, archive, and clustering. This transformation approach makes the optimization algorithms simple and easy to follow. As a result, many efforts in designing new algorithms can be saved.

Based on above idea, the bi-objective transformation and tri-objective transformation have been designed for multimodal and constrained optimization problems including benchmarking, nonlinear equation systems, power economic dispatch, and layout optimization. Corresponding research findings have been accepted by *Information Sciences*, *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, and *IEEE Transactions on Emerging Topics in Computational Intelligence*.

Date : 25 April 2023, Tuesday

Time : 2:30 – 4:00 pm

Venue : SEK105, 1/F, Simon & Eleanor Kwok Building

Language : English



*** All are Welcome ***