

國立中正大學數學系  
暨應用數學碩士班、統計科學碩士班  
**學 術 演 講**

**Neural Initialization and Local Search for Accelerating  
Digital and GPU Annealers in QUBO Problems**

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**Abstract**

Quadratic unconstrained binary optimization (QUBO) is a common framework for modeling large-scale combinatorial optimization problems in scientific computing, scheduling, manufacturing, and resource allocation. This talk presents a neural initialization and local search strategy for accelerating QUBO solvers based on digital and GPU annealers. From each QUBO matrix, bit-wise structural features are extracted and used by a neural network to predict variable-wise probabilities. Candidate binary solutions are generated by thresholding and Bernoulli sampling, refined by local search, and used as warm-starts for annealing. Experiments on random QUBO matrices and synthetic subset-sum instances show that the proposed approach reduces solve time while maintaining final objective quality.

日 期:115 年 9 月 16 日(星期三) 16:10~17:00

地 點:本校數學館 527 教室(嘉義縣民雄鄉大學路 168 號)

茶 會:15:30~16:00 數學館四樓 409 室舉行

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