

國立中山大學應用數學系

學術演講

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講題：Variable Selection for High-Dimensional Regression Models
with Higher-Order Interactions

時間：2026/10/01 (Thursday) 14:10 ~ 15:00

地點：理 SC4009-1 教室

茶會：13:30

Abstract

This work proposes the network orthogonal greedy algorithm (Network OGA), an efficient method designed to capture higher-order (beyond second-order) interactions. By integrating the concepts of ranking and stepwise forward regression, Network OGA leverages the advantages of both approaches. The algorithm is applicable to high-dimensional interaction models of arbitrary unknown orders. We establish the sure screening property for Network OGA and demonstrate that, when coupled with a high-dimensional information criterion (HDIC), the method achieves variable selection consistency. Simulation studies further validate its superior performance.

Keywords: greedy algorithm, high dimensionality, higher-order interactions, sure screening, variable selection consistency

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