# 中央研究院統計科學研究所

# 學 術 演 講

講 題：Personalized and Federated Data Analytics Beyond Predictive Modeling

演 講 人：Prof. Raed Al Kontar
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University of Michigan

時 間： 2024-12-11(Wed.) 14:30-16:00

地 點：Room 308, Institute of Statistical Science；The tea reception will be held at 14:10.

備 註： Lecture in English. Online live streaming through Cisco Webex will be available.

## Abstract

The tremendous increase in computation capabilities of edge devices, along with the rapid market infiltration of powerful AI chips, has led to explosive interest in collaborative analytics, such as federated learning, that distribute model learning across diverse sources to process more of the user's data at the origin of creation. To date, these efforts have focused mainly on predictive modeling, where the goal is to create a global or personalized predictive map (often a deep network) that leverages knowledge from different sources while circumventing the need to share raw data. In this talk, I argue that predictive modeling, without untangling the nature of heterogeneity across users, can lead to swift and evident failures. With this in mind, I then present: i) A descriptive framework capable of extracting interpretable and identifiable features that describe what is shared and unique across diverse data datasets, ii) A personalized prescriptive framework for collaborative decision-making wherein dispersed users effectively distribute their trial & error efforts to improve and fast-track the optimal design process.

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