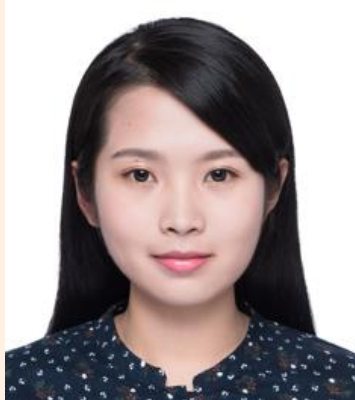


The Hong Kong University of Science and Technology  
Dept of Information Systems, Business Statistics  
and Operations Management  
Seminar Announcement



**Optimal Budget Allocation  
With Online Ad Campaign**

by

**Miss Huijun Chen**

PhD candidate

Operations Management

ISOM, HKUST

**Date** : **19 November 2021 (Friday)**  
**Time** : **10:30 - 11:45 AM**  
**Venue** : **Room 4047, LSK Business Building**



**Abstract:**

This paper investigates how the presence of the spillover and carryover effects in the multi-channel ad campaign affects the budget allocation decisions of a marketing agency, which strives to maximize the total expected number of clicks or conversions over the campaign. A salient feature of the problem is that the market agency only has access to aggregate data such that the effectiveness of different online advertising channels cannot be estimated using standard methods that typically require individual-level data. The authors propose a data augmentation method for estimating the microlevel consumer advertising response models using aggregate data. The essence of this approach is to simulate latent state dynamics such that the generated data is consistent with the observed aggregate data. The authors then demonstrate the validity of the method using actual channel-level advertising campaign data from an online fashion retailer in Korea. Lastly, the authors study a fluid mean-field formulation and derive key structural insights on the optimal budget allocation policies, which are leveraged to design an implementable budget allocation policy.

**Bio:**

Huijun Chen is a fourth-year Ph.D. student in Operations Management at the Department of ISOM, supervised by Professor Ying-Ju Chen and Professor Dongwook Shin. Huijun obtained her bachelor's degree from Fudan University and a master's degree from Columbia University in the City of New York. Her research interests are in the areas of empirical operations management, competitive marketing, and industrial organization.

All interested are welcome!  
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