

Department of Systems Engineering and Engineering Management

Seminar Series

Approximation Algorithms for Product Framing and Pricing

Dr. Anran Li

Postdoctoral Researcher

Department of Industrial Engineering & Logistics Management
The Hong Kong University of Science and Technology, Hong Kong

Date	20 December 2017 (Wednesday)
Time	2:30pm - 3:30pm
Venue	P7303, 7/F, Yeung Kin Man Academic Building

Abstract

In this work we propose one of the first models of "product framing" and pricing. Product framing refers to the way in which consumer choice is influenced by how products are framed, or displayed. We introduce a model in which a set of products are organized into a set of virtual pages. We assume that consumers consider only products in the top pages, with different consumers willing to see a different number of pages. Consumers select a product, if any, from these pages following a general choice model. We show that the product framing problem is NP-hard. We derive algorithms with guaranteed performance relative to an optimal algorithm under different assumptions. Our algorithms are fast, easy to implement, and dominate the best known performance bounds. We also present structural results for pricing under framing effects. Products are sorted in descending order of quality, and markups are shown to be page dependent, with higher markups associated with products on pages seen by fewer consumers, so products in the first page are of the highest quality and have the lowest markups.

About the Speaker

Dr. Anran Li currently works as a Postdoctoral Researcher at the Hong Kong University of Science and Technology. She received her Ph.D degree from the department of

Industrial Engineering and Operations Research at Columbia University. Anran is broadly interested in developing data-driven algorithms, especially with the application to Revenue Management and E-Commerce. Her recent research has been focusing on behavioral consumer choice modelling, and online personalised assortment optimisation and pricing, building on collaboration with global corporations such as the Walt Disney company, Hewlett Packard, SAS Institute, Sabre Airline Solutions and Jet.com.

Enquiry: 3442 8408

All are Welcome!

SEEM Seminar 2017-2018/015