THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

PolyU 理大商學院
Business School
Innovation-driven Education and Scholarship

Department of
MANAGEMENT & MARKETING
管理及市場學系

Management and Marketing
Joint Public Lecture

Date : 19 Jun 2024 (Wed)
Time : 2:00pm-3:50pm
Venue : N001, PolyU campus

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Unveiling E-Book Bestsellers: Predictive Insights from Consumption Patterns Using Machine Learning

Prof. Wonseok OH
Chair Professor of Information Systems, College of Business at Korea Advanced Institute of Science and Technology

In the e-book industry, the profitability of stakeholders hinges upon the sales of "bestsellers." However, accurately identifying these titles poses a significant challenge. While early online reviews have traditionally served as a key resource for forecasting new e-book sales, their reliability and credibility are often undermined by concerns, such as manipulation, rating inflation, and "cold-start" issues. As a result, sales predictions solely based on consumer-generated reviews may fall short of expectations. Our study introduces innovative consumption-based prediction approaches that leverage readers' consumption patterns, offering a promising avenue for identifying bestsellers. Drawing from the perspectives of sustained attention, we identify three key aspects of users' consumption trajectories— amount, duration, and intensity— and incorporate them into our prediction models established using time-sequenced machine learning algorithms, such as LSTM. Our findings demonstrate substantial improvements in bestseller prediction accuracy when consumption data is integrated into the models alongside online review and book characteristic parameters. Consumption-driven predictions significantly enhance sensitivity compared to baseline models. The highest performance enhancement is achieved when both consumption and online reviews are considered in tandem. Furthermore, we explore the nuanced impact of consumption-based predictions across various review characteristics, such as valence, extremity, and informativeness. In addition, the inclusion of consumption data can be particularly helpful for predicting the success of e-books by new authors with no historical sales. Through rigorous robustness checks, we validate the reliability of our findings, affirming that consumption-driven and online review-based predictions effectively complement and substitute each other in enhancing sales forecasts for digital content products.

Prof. Wonseok OH is the K.C.B. Chair Professor of Information Systems in the College of Business at Korea Advanced Institute of Science and Technology. He received his Ph.D. in Information Systems from the Stern School of Business at New York University. His research interests include the economics of information systems, consumer data analytics, AI business strategy, mobile strategy, dgital marketing & digital finance . His research has been published in premier journals, including Information Systems Research, MIS Quarterly, Management Science, Journal of Management Information Systems, and Production and Operations Management.

Introducing Machine-Learning-Based Data Fusion Methods for Analyzing Multimodal Data: An Application of Measuring Trustworthiness of Microenterprises

Prof. Xueming LUO
Charles Gilliland Distinguished Chair Professor of Marketing, Professor of Strategic Management, Professor of Management Information Systems at Fox School of Business and Management

Multimodal data, comprising interdependent unstructured text, image, and audio data that collectively characterize the same source, with video being a prominent example, offer a wealth of information for strategy researchers. Our study highlights the vital role of both verbal and nonverbal communication in attaining strategic objectives. Through the analysis of multimodal data—incorporating text, images, and audio—we demonstrate the essential nature of interpersonal interactions in bolstering trustworthiness, thus facilitating the success of microenterprises. Leveraging advanced machine learning techniques, such as data fusion for multimodal data and Explainable Artificial Intelligence (XAI), we notably enhance predictive accuracy and theoretical interpretability in assessing trustworthiness. By bridging strategic research with cutting-edge computational techniques, we provide practitioners with actionable strategies for enhancing communication effectiveness and fostering trust-based relationships. Access our data and code for further exploration.

Prof. Xueming LUO is the Charles Gilliland Distinguished Chair Professor of Marketing, Professor of Strategy and MIS, and Founder/ Director of the Global Institute for Artificial Intelligence & Business Analytics in the Fox School of Business at Temple University. Xueming's research is quantitative in nature, and he is an interdisciplinary thought-leader in leveraging AI/ML algorithms, text/audio/image/video big data, econometrical methods, and field experiments to model, explain, and optimize digital marketing, customer analytics, mobile commerce, company strategies, platform economy, social media analytics, and social responsibility. Within marketing, he has been ranked as top 9th worldwide (1st among all Chinese) regarding Author Productivity in the Premier Marketing Journals (JCR, JM, JMR, MKSC) during 2014-2023. Outside of marketing, his research has been featured by premier journals in Information Systems (ISR and MISQ), management, Strategy, and OM (MgSc, POM, SMJ, AMJ).