

THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

Department of Information Systems, Business Statistics and Operations Management

IS SEMINAR ANNOUNCEMENT



Impact of Data Privacy Regulations on Recommender Systems Performance

by

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DATE	12 October 2026 (Monday)
TIME	2:30 pm - 4:00 pm
VENUE	4/F Meeting Room (Room 4047), LSK Business Building

ABSTRACT

Data privacy regulations empower consumers to control the collection of their personal data. A significant consequence of these regulations is their effect on various data-driven business solutions, especially on personalization technologies and recommender systems. We investigate the potential impacts of diverse real-world data privacy practices (that can be adopted by firms in response to various data privacy regulations) on the recommender systems performance. We also examine how these impacts vary across different personalization contexts and applications. In particular, we distinguish between scenarios where the user population exhibits more stable vs. more dynamic (i.e., changing) preferences, as these scenarios often represent distinctly different recommendation settings. We use a simulation framework, carefully seeded with real-world data, for a comprehensive evaluation of the recommender system performance under numerous scenarios, such as different recommendation algorithms, different data privacy practices, different degrees of users' preference dynamics, etc. Extensive computational experiments uncover several robust performance patterns for different data privacy practices and highlight substantial differences between recommendation settings with stable vs. changing user preferences. Furthermore, building upon the comprehensive findings from our computational experiments, we propose flexible, parameterizable data privacy practice designs based on the notion of revelation protection. The proposed approach is designed to provide an effective balance between personalization performance and privacy considerations, as demonstrated using extensive simulation experiments. The findings of this study have significant implications for the design of privacy-aware recommender systems in the context of contemporary data privacy regulations. The findings can also be informative to policymakers for understanding the practical implications of various data privacy practices and for designing future policies.

BIOGRAPHY

Liben (Ben) Chen is a final-year Ph.D. candidate in Information & Decision Sciences at the Carlson School of Management. His research centers on trustworthy AI systems, with two complementary focuses: (1) understanding the longitudinal dynamics of the human-AI feedback loop under adversarial pressure or regulatory constraints, and (2) designing multi-objective AI systems that jointly optimize predictive performance and trustworthiness properties, such as privacy awareness and adversarial robustness. His research addresses trustworthiness challenges in high-value commercial AI systems, such as recommender systems and LLM-based systems, drawing on a diverse methodological toolkit spanning machine learning, deep learning, agent-based simulation, and analytical modeling. His dissertation research has been conditionally accepted at Information Systems Research, a leading academic journal in information systems. Beyond his research, Liben has been actively involved in the academic community, notably as a reviewer for Management Science and Information Systems Research.