THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

Department of Information Systems, Business Statistics and Operations Management

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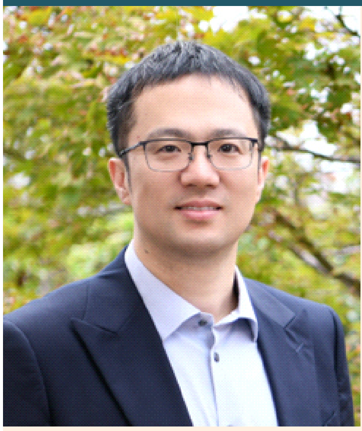

Selling Data under Contribution Uncertainty: A Relational Contract Approach

by

Prof. Yifan DOU
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DATE	28 November 2025 (Friday)
TIME	10:30 am - 12:00 noon
VENUE	4/F Meeting Room (Room 4047), LSK Business Building

ABSTRACT

In business-to-business data markets, the transactional value is derived and created from the collaboration between sellers, who prepare and customize datasets, and buyers, who deploy them in applications such as predictive analytics. Unlike traditional goods, data transactions face unique contractual challenges because it is statistically difficult to disentangle each party's contribution. This study examines when and how a relational contract--a flexible, self-enforcing agreement sustained by long-term collaboration--can facilitate data transactions. Using a game-theoretic model, we show that relational contracts, where sellers post initial prices and buyers provide performance-based bonuses, outperform fixed-price contracts and deliver greater benefits for both parties. Our analysis further uncovers a novel U-shaped pricing pattern: sellers optimally charge higher prices at both very low and very high customization costs, which underscores the strategic complexity of data pricing. We also establish robustness by extending the model to risk-averse sellers. These findings provide actionable insights for data market participants and platform designers seeking to promote efficient and sustainable data transactions under uncertainty.

BIOGRAPHY

Dr. Yifan Dou is a professor in the Department of Information Management and Business Intelligence at the School of Management, Fudan University. He received his bachelor's and doctoral degrees from the School of Economics and Management, Tsinghua University. His research interests cover e-commerce, digital platforms, and the economics of digital goods and services. He is currently an associate editor for Management Science and Information Systems Research. The topics of his recent works cover the economics of the state-of-art technology development and the emerging data markets.