Seung Yoon Lee

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Education

Yale University, School of Management
- Ph.D. in Marketing — (Expected) 2025
- M.A. & M.Phil. in Marketing — 2021

Korea Advanced Institute of Science and Technology (KAIST)
- M.S. in Information Systems — 2018
- B.S. in Industrial Systems Engineering — 2016
  - Minor: Business and Technology Management

Research Interests

Methodological: Structural Modeling, Multimodal Machine Learning, Field Experiments
Substantive: Virtual Environments, Personalization, Targeting, Digital Advertising, Gamified Environments

Working Papers

"A Structural Model of Consumer Utility Generation in Virtual Environments" (with K. Sudhir and Kosuke Uetake) **Job Market Paper**

"Lookalike Targeting on Others' Journeys: Brand Versus Performance Marketing" (with K. Sudhir and Subroto Roy) Under Review, *Information Systems Research*

Selected Works in Progress

A Structural Model of Production and Consumption for Virtual Economy (with K. Sudhir)

Information Modality and Persuasion in Advertising: A Customer Journey Perspective

Pre-Ph.D. Publication

Lee, Seung Yoon, Yoonseock Son, and Wonseok Oh "Effectiveness of Integrated Offline-and-Online Promotions in Omnichannel Targeting: A Randomized Field Experiment" *Journal of Management Information Systems* (2021)

Invited Seminar Talks

- Harvard University, Harvard Business School — October 2024
- National University of Singapore, Business School — October 2024
- HKUST, Business School — September 2024

Awards & Honors

AMA-Sheth Foundation Doctoral Consortium Fellow 2023

The Grand Prix Award, Undergraduate Research Program, KAIST 2014

- "Optimizing Distribution of Items in Fashion Industry using Big Data and Business Analytics" (with So Yeon Kim, Eun Jeong Ko, Ji Eun Roh, and Young Jae Jang)

Industrial Systems Engineering Frontier Award, KAIST 2014

Conference Presentations

"Ownership and Commercial Rights in the Metaverse: Case of NFTs"

- International Conference on Crypto-Marketing, Columbia Business School, December, 2022

"The Digital Diet: Effects of Self-Regulatory IT Artifacts on Mobile App Usage Patterns"

- INFORMS Conference on Information Systems and Technology (CIST), Houston, TX, 2017

"Omnichannel Targeting: A Randomized Field Experiment on "Online-to-Offline-to-Online" Promotions"

- Workshop on Information Systems and Economics (WISE), Seoul, South Korea, 2017

"Distribution Optimization in Fashion Retail Industry: a Case Study at Kolon Sports"

- Proceedings of the 15th Asia Pacific Industrial Engineering & Management Systems Conference (APIEMS), Jeju, South Korea, 2014

Teaching Interests

Customer Analytics, AI & Digital Marketing, Metaverse Strategy, Applied Machine Learning

Teaching Experience

Teaching Assistant *Yale School of Management*

AI Strategy & Marketing (MBA)	Vineet Kumar (Spring 2022, 2024)
Basics of Economics (Core, EMBA)	Kai Hao Yang, Jidong Zhou (Summer 2023)
Big Data & Customer Analytics (MBA)	Kosuke Uetake (Spring 2021)
Customer (Core, EMBA)	K. Sudhir (Fall 2022)
Digital Strategy (MBA)	Vineet Kumar (Fall 2020, 2021)
Managing Marketing Programs (MBA)	Jiwoong Shin (Spring 2020, 2021)
Marketing Strategy (MBA, EMBA)	Jiwoong Shin (Fall 2019, 2020, 2021, 2023)
Strategic Market Measurement (MBA)	Aniko Oery (Fall 2019)

Work Experience

Ph.D. Research Intern, Game Company, South Korea Winter 2022

- *company name anonymized due to NDA*

Ph.D. Research Intern, Zuora (Subscriptions Platform), San Francisco, CA Summer 2019

Research Intern, RecoBell (Recommender Systems Startup), Seoul, Korea Winter 2017

Research Assistant, System Design Management Laboratory, KAIST Summer 2014

Ph.D. Coursework

Department of Economics

Microeconomics I	Larry Samuelson, John Geanakoplos, Eduardo Davilla
Microeconomics II	Johannes Horner
Econometrics I	Don Andrews
Econometrics II	Xu Cheng
Industrial Organization I	Phil Haile, Mitsuru Igami
Industrial Organization II	Steve Berry, Katja Seim
Topics in Empirical Economics and Public Policy	Phil Haile, Edward Vytlacil

Department of Computer Science

Advanced Natural Language Processing	Drago Radev
Natural Language Processing	Drago Radev
Deep Learning	Smita Krishnaswamy
Applied Data Mining and Machine Learning	John Lafferty

School of Management

Empirical Methods in Marketing	K. Sudhir
Analytical Methods in Marketing	Jiwoong Shin
Behavioral Economics	Shane Frederick
Seminar in Quantitative Marketing I	Yale Quant Marketing Faculty
Seminar in Quantitative Marketing II	Yale Quant Marketing Faculty

References

K. Sudhir (Chair)
James L. Frank '32 Professor of Marketing
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Kosuke Uetake
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Yale School of Management
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Selected Abstracts

A Structural Model of Consumer Utility Generation in Virtual Environments (with K. Sudhir and Kosuke Uetake) Job Market Paper

Virtual environments, such as gaming, offer rich opportunities for personalization due to their controlled and dynamic nature, but also pose challenges as they interact with heterogeneous consumer motivations to spend time and money. These two decisions of time and money are dynamically interlinked: money (purchase "tools") spent changes the utility from the time spent. In this paper, we build a structural model of player behavior in gaming environments, where players dynamically and heterogeneously optimize their choices of time and money as inputs. We use the model to personalize promotions and the gaming environment to improve player retention and monetization. The model generalizes dynamic durable goods purchase models (where only purchases are made) and dynamic models of effort/time response (as in incentive compensation models); this makes our model suitable for novel virtual and gamified environments requiring both time/effort and money inputs (e.g., digital learning/health habits, gamified loyalty programs). Estimates using data from a single player golf game reveal three latent segments of players: *premium enthusiasts* who derive enjoyment from play itself and most willing to purchase tools; and *win-seekers* and *progress-seekers* who both find playing the game itself costly and have higher price sensitivity– the former primarily values immediate rewards, while the latter also values level-up rewards. We use the model to generate real-time personalization policies on who to target and when during gameplay with (i) giving tools; and (ii) dynamic difficulty adjustment of the game. Our results demonstrate dynamic complementarities and substitution in time and money inputs as players heterogeneously and dynamically interact with the gaming environment.

Lookalike Targeting on Others' Journeys: Brand Versus Performance Marketing (with K. Sudhir and Subroto Roy)

Lookalike Targeting is a widely used model-based ad targeting approach that uses a seed database of individuals to identify matching "lookalikes" for targeted customer acquisition. An advertiser has to make two key choices: (1) who to seed on and (2) seed-match rank range. First, we find that seeding on others' journey stage can be effective in new customer acquisition; despite the cold start nature of customer acquisition using lookalike audiences, third parties can indeed identify factors unobserved to the advertiser that move individuals along the journey and can be correlated with the lookalikes. Further, while journey-based seeding adds no incremental value for brand marketing (click-through), seeding on more downstream stages improves performance marketing (donation) outcomes. Second, we evaluate audience expansion strategies by lowering match ranks between the seed and lookalikes to increase acquisition reach. The drop in effectiveness with lower match rank range is much greater for performance marketing than for brand marketing. Performance marketers can alleviate the problem by making the ad targeting explicit, and thus increase perceived relevance; however, it has no incremental impact for higher match lookalikes. Increasing perceived targeting relevance makes acquisition cost comparable for both high and low match ranks.