

# 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 Economy and Commerce, Gaming, CRM, Targeting, Advertising

## Working Papers

“Customer Management in Gaming Environments: A Dynamic Structural Analysis” (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, *Marketing Science*

## 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)

## 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
• <i>company name anonymized due to NDA</i>	
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

## Workshop Attendance

Dynamic Structural Econometrics Summer School	2023
IBM Neuro-Symbolic AI Summer School/ Winter Workshop	2022 - 2024
Quantitative Marketing and Structural Econometrics Workshop	2019

## 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 Vytlačil

### *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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### **Jiwoong Shin**

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## Selected Abstracts

### **Customer Management in Gaming Environments: A Dynamic Structural Analysis** (with K. Sudhir and Kosuke Uetake) Job Market Paper

Gaming and gamified environments possess unique characteristics that influence how consumers spend time and money. The core of the customer management problem in such environments is to ensure that the challenge is difficult enough to motivate agents to exert more effort, yet not so challenging that they get discouraged and quit. In gaming, firms also monetize players' motivation to exert effort by providing them an opportunity to purchase ability-enhancing items that increase their performance; this increases player retention, while simultaneously driving future monetization as players reach higher levels – creating a two-way positive feedback loop between retention and monetization. In this paper, we develop a dynamic structural model of consumer response for gaming environments. The model accommodates key features that are common in such environments: (i) increasing levels of difficulty that result in player attrition, retaining only the most able players, and ii) opportunity to purchase in-game items that improve players' ability to win. The dilemma for game designers is to manage the dynamics between retention and monetization for players with widely ranging ability levels and gameplay preferences. Counterfactual results reveal heterogeneous effects: accelerating early level progression for high ability players hurts firm profit from *premium enthusiasts* who derive enjoyment from play itself and are willing to pay, but helps retention and monetization from “*easy-progress*” and “*instant-win*” *seekers* who find playing the game itself costly. We highlight the added value of incorporating unobserved preference heterogeneity by designing personalized interventions at players' level frontiers, enabling firms to tap into the benefits of the positive feedback loop of retention and monetization.

### **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.