Kitae Kim

Assistant Professor
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POSITIONS HELD

2026–Present **Assistant Professor**
School of Business, Korea Aerospace University, Gyeonggi-do, Republic of Korea

2025–2026 **Postdoctoral Researcher**
Korea Institute of Science and Technology Information (KISTI), Daejeon, Republic of Korea
- Led LLM-based semantic search system development for data platforms
- Developed causal discovery and deep learning–based decision support system for semiconductor manufacturing

EDUCATION

2021–2025 **Ph.D. in Management Engineering** (Focus: Information Systems)
Korea Advanced Institute of Science and Technology (KAIST), Seoul
GPA: 3.91/4.3 | Advisor: Prof. Sung-Hyuk Park

2018–2020 **M.S. in Management Engineering**
KAIST, Seoul
GPA: 3.82/4.3 | Advisor: Prof. Yong-Jin Hyun

2013–2017 **B.S. in Civil & Environmental Engineering**
Korea University, Seoul
GPA: 3.85/4.5 | Graduated with Honors

RESEARCH INTERESTS

Machine Learning, Causal Inference, Agentic AI, Human-AI Collaboration, Digital Platform Design, Digital Marketing Analytics, Operation Optimization

RESEARCH PAPERS AND WORK-IN-PROGRESS

Under Review

- **Kim K.**, Lee M., Park SH., Park SJ., *Optimizing Media Planning: Multimethod Evidence of a Prescriptive Media Budget Allocation Framework (MBAF).* Presented at HICSS 2022. Under 1st round review at *International Journal of Advertising*.
- Kwon S., **Kim K.**, Park SH., *Shorter, Newer? How Monetization Reshapes Creator Strategy on YouTube Shorts.* Presented at KrAIS Summer Workshop 2023. Under 2nd round review at *Internet Research*.

Work in Progress

- **Kim K.**, Lee D., Park SH., Sim J., *Digital Rule of Thumb: Impact of Autocomplete in Search Engines across Mobile and Personal Computer Channels* (SSRN: 5001062, 2024). Presented at SCECR 2022, INFORMS WDS 2022, ICIS 2022, WISE 2025; target: *Information Systems Research*.
- **Kim K.**, Lee M., Park SH., *DMMM: Deep Marketing Mix Modeling and Optimal Budget Allocation.* Presented at INFORMS International 2025, AMCIS 2025; target: *Management Science*.

Other Peer-Reviewed Publications

- Lee, S., **Kim, K.**, Y. J., Park, B. (2025). Evaluating sponsorship effects influenced by involuntary media multitasking: Neuromarketing approach. *International Journal of Applied Sports Sciences*.
- Cho, H., **Kim, K.**, Lee, S. (2025). Mood transfer research between program and advertisement: Applying neuromarketing. *Journal of the Korea Convergence Society*.

- Lee, S., **Kim, K.**, Hyun, Y. J., & Park, B. (2024). From sensation to emotion: A neuromarketing study of sport sponsorship effects. *Sport Marketing Quarterly*, 33(2), 99–115.
- Lee, S. H., Hyun, Y. J., Park, B., **Kim, K.**, & Kwun, Y. Y. (2022). How a sensational event influences sponsorship effects: Applying neuromarketing. *Korean Journal of Sport Science*, 33(3), 451–463.

CONFERENCE PRESENTATIONS

(Presenter underlined)

- **Kim K.**, Lee M., Park SH. (2025). DMMM: Deep Marketing Mix Model for Optimal Budget Allocation. *AMCIS*, Montréal, Canada.
- **Kim K.**, Lee M., Park SH. (2025). 4M: Machine Learning Based Marketing Mix Model. *INFORMS International*, Singapore.
- **Kim K.**, Lee M., Park SH. (2025). Toward a Machine Learning Marketing Mix Model. *KrAIS Summer Workshop*, Busan, Korea.
- **Kim K.**, Lee D., Park SH., Sim J. (2023). Modalities and Search Costs: A Case of Autocomplete. *KrAIS Summer Workshop*, Seoul, Korea.
- Kwon S., **Kim K.**, Park SH. (2023). Does Money Make Creators Work Harder? *KrAIS Summer Workshop*, Seoul, Korea.
- **Kim K.**, Lee D., Park SH., Sim J. (2022). Modalities and Search Costs: A Case of Autocomplete in Search Engine. *POST-ICIS KrAIS Workshop*, Copenhagen, Denmark.
- **Kim K.**, Lee D., Park SH., Sim J. (2022). Digital Rule of Thumb: A Natural Experiment on Autocomplete in Search Engines. *ICIS*, Copenhagen, Denmark **(Travel Grant, KAIST)**.
- **Kim K.**, Lee D., Park SH., Sim J. (2022). Digital Rule of Thumb: A Natural Experiment on Autocomplete in Search Engines. *INFORMS Workshop on Data Science*, Indianapolis, IN, USA.
- **Kim K.**, Park SH. (2022). How to Choose the Right Person? Social Media Marketing Optimization Framework. *ICEC*, Daegu, Korea **(Best Research-in-Progress Paper)**.
- **Kim K.**, Lee D., Park SH., Sim J. (2022). Digital Rule of Thumb: A Natural Experiment on Autocomplete in Search Engines. *SCECR*, Madrid, Spain.
- Park SH., Lee M., **Kim K.**, Shin D. (2022). A Nonlinear Optimization Model of Advertising Budget Allocation across Multiple Digital Media Channels. *HICSS*, Online.
- Park SH., Lee M., **Kim K.**, Shin D. (2021). Nonlinear Optimization Model of Advertising Budget Allocation across Multiple Digital Media Channels. *SCECR*, Online.

INDUSTRY COLLABORATIONS

2024–Present **Wharton AI & Analytics Initiative (WAIAI) & Google**
- Project: Response modeling with aggregate and event-level data
- Role: Submitted research proposal on deep learning–based marketing mix models and derivative-free optimization for budget allocation
- Results: In progress

2023–Present **ImpactAI**
- Project: Deep learning–based marketing mix models and optimal budget allocation framework
- Role: Developed ML/DL marketing mix models and budget allocation strategy using derivative-free optimization
- Results: +30% prediction accuracy; +10% return on marketing spend

2022–2023 **UNICEF Korea**
- Project: Optimal advertising budget allocation across traditional and digital channels (donor lifetime value)
- Role: Analyzed 10-year advertising efficiency across UNICEF Korea marketing channels; recommended budgeting strategies
- Results: +7% donors' lifetime donation

2021–2022 **PTKorea**
- Project: Advertising sales prediction for Samsung online store
- Role: Developed ML sales prediction algorithm and simulation with marketing activities
- Results: SKU-level prediction +30% accuracy vs. baseline

2021 **Kyobo Book**
- Project: Deep learning sales forecasting system for books
- Role: Designed data pipeline and policy; developed LSTM-based SKU-level forecasting
- Results: +30% forecasting accuracy

2020–2022 **REVU Corporation**
- Project: Optimal influencer portfolio recommendation for social media marketing
- Funding: ∼$100K grant (Korea Ministry of SMEs and Startups)
- Role: Led end-to-end ML solution for influencer portfolio selection
- Results: +15% KPI in field experiments (Korea & Taiwan)

2020 **Eigene Korea**
- Project: Deep learning–based recommender systems
- Role: Developed Item2Vec-based recommendation algorithm for beauty products
- Results: Model deployed in production

TEACHING

- Financial Data Analytics, Teaching Assistant – KAIST, Spring 2021, Spring 2022
- IT-based Business Innovation, Teaching Assistant – KAIST, Fall 2021
- IT Management, Teaching Assistant – KAIST, Fall 2022
- IT Strategy and Business (Executive MBA), Teaching Assistant – KAIST, Fall 2023
- Introduction to AI and ML, Teaching Assistant – KAIST, Spring 2024
- IT System Design, Teaching Assistant – KAIST, Fall 2024

MENTORSHIP

Mentored two master's students on thesis projects applying data analytics and causal inference in real-world business contexts.
- Causal impact of same-day delivery on sales and returns by product category (DiD & Matching, 2024)
- Spillover effects of short-form video content on platform engagement (Staggered DiD & Matching, 2025)

COURSEWORK TRAINING

- **Methods:** Econometrics, Applied Econometrics, Probability and Statistics, Behavioral Science Research Methods, Business Modeling, IT Management Seminars
- **Theory:** IT Management, Industrial Organization, Marketing Theory, Consumer Behavior Theories, Advanced Marketing Issues

TECHNICAL SKILLS

- **Programming:** Python, SQL
- **Data Analysis:** STATA
- **Deep Learning:** PyTorch, TensorFlow
- **Optimization:** CVXPY, Optuna
- **Productivity:** MS Word, Excel, PowerPoint

ACADEMIC SERVICE

- **Ad-hoc Review:** ICIS, AMCIS, PACIS, WITS, CIST, KrAIS
- **Award:** Best Reviewer, KrAIS Summer Workshop, 2025