

# SEUNGKI MIN

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## RESEARCH INTEREST

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**Sequential decision-making & learning algorithms for business applications** – bandit optimization, dynamic programming, reinforcement learning, online advertising, algorithmic trading

## ACADEMIC APPOINTMENTS

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**Seoul National University**, Seoul, South Korea

*Assistant Professor of Operations Management at SNU Business School*

*Feb 2025 – Present*

**Korea Advanced Institute of Science and Technology (KAIST)**, Daejeon, South Korea

*Assistant Professor of Industrial & Systems Engineering (ISysE)*

*Sep 2021 – Jan 2025*

## EDUCATION

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**Columbia University**, New York, U.S.

*Sep 2015 – June 2021*

*Ph.D., Decision, Risk, and Operations, Graduate School of Business*

- Advisors: Ciamac C. Moallemi, Costis Maglaras
- Thesis title: Modern Dynamic Programming Approaches to Sequential Decision Making

**Seoul National University**, Seoul, South Korea

*Feb 2014*

*B.S., Electrical and Computer Engineering*

## PAPERS

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S. Min, D. J. Russo. **An Information-Theoretic Analysis of Nonstationary Bandit Learning**. Major revision at *Operations Research*. Initial version: July 2023

- Preliminary version: S. Min, D. J. Russo. An Information-Theoretic Analysis of Nonstationary Bandit Learning. *Proceedings of the 40th International Conference on Machine Learning (ICML)*, PMLR 202:24831-24849, 2023

S. Min, C. Maglaras, C. C. Moallemi. **Thompson Sampling with Information Relaxation Penalties**. *Management Science*. Published online in Articles in Advance. 2024

- Preliminary version: S. Min, C. Maglaras, C. C. Moallemi. Thompson Sampling with Information Relaxation Penalties. *In Advances in Neural Information Processing Systems 32*, pages 3549–3558, 2019

Y. Kanoria, S. Min, P. Qian. **The Competition for Partners in Matching Markets**. *Management Science*. Published online in Articles in Advance. 2024

- Preliminary version: Y. Kanoria, S. Min, P. Qian. In Which Matching Markets does the Short Side Enjoy an Advantage? *Proceedings of the Thirty-Second Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 1374–1386, March 2021

J. Kim, S. Min. **Risk-sensitive Policy Optimization via Predictive CVaR Policy Gradient**. *Proceedings of the 41st International Conference on Machine Learning (ICML)*, PMLR 235:24354-24369, 2024

S. Min, C. Maglaras, C. C. Moallemi. **Cross-sectional Variation of Intraday Liquidity, Cross-Impact and their Effect on Portfolio Execution**. *Operations Research* 70(2):830–846. March 2022

S. Min, C. Maglaras, C. C. Moallemi. **Risk-sensitive Optimal Execution via a Conditional Value-at-Risk Objective**. Major revision at *Management Science*. Initial version: 2022. 2021 INFORMS Section on Finance Best Student Paper Competition Finalist

S. Min, C. C. Moallemi, D. J. Russo. **Policy Gradient Optimization of Thompson Sampling Policies**. Submitted to *INFORMS Journal on Computing*. Initial version: 2020

## WORK EXPERIENCE

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- J.P. Morgan**, New York, U.S. July 2019 – Sep 2019  
*Research internship, Automated Trading System*
- Conducted research on high-frequency price impact and high-frequency execution strategy
- Tachyon Trading**, Seoul, South Korea May 2012 – Jun 2015  
*Co-founder & Head of IT, High-frequency trading & market making*
- Developed trading strategies for Kospi200 & Nikkei index futures and options
  - Developed a low-latency trading platform including simulation/analysis tools
- Yonhap Infomax**, Seoul, South Korea Feb 2009 – Dec 2011  
*Developer, Financial market data vendor & news agency*
- Served alternative military service
  - Developed financial data visualization/analysis tools & mobile apps

## TEACHING

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- Operations Research: Stochastic Modeling Fall 2021, Fall 2022, Fall 2023, Fall 2024
- Data Science for Decision Making Spring 2023, Spring 2024
- Basics of Artificial Intelligence Fall 2021, Fall 2022, Fall 2023
- Data-driven Decision Making and Control Spring 2022

## HONORS

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- National Research Foundation of Korea (NRF) Research Grant (~\$280,000) 2022 – 2025
- KAIST Settlement Funding (~\$80,000) 2021
- J.P. Morgan Sponsored Research Gift (\$150,000) 2019
- Columbia Business School Fellowship 2015 – 2021
- KFAS Undergraduate Student Scholarship (\$3,600 per year) 2007 – 2014
- Presidential Science Scholarship (\$10,000 per year) 2006 – 2014
- ACM Programming Contest in Korea: 3rd place Sep 2007
- Korea Olympiad in Informatics: 2nd place July 2005