

SEUNGKI MIN

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RESEARCH INTEREST

Sequential learning & decision-making algorithms for business applications – bandit optimization, reinforcement learning, risk-sensitive optimization, preference learning, algorithmic trading, online advertising

ACADEMIC APPOINTMENTS

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

Assistant professor, **Industrial & Systems Engineering (ISyE)**

Sep 2021 – Present

EDUCATION

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

Preprints are available at <http://do.kaist.ac.kr>

S. Min, D. J. Russo. **An Information-Theoretic Analysis of Nonstationary Bandit Learning**. Submitted to *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. **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. **Thompson Sampling with Information Relaxation Penalties**. Accepted at *Management Science*. Initial version: 2019

- 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

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

Y. Kanoria, S. Min, P. Qian. **The Competition for Partners in Matching Markets**. Accepted at *Management Science*. Initial version: 2020

- 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

WORK EXPERIENCE

J.P. Morgan , New York, U.S. <i>Research internship, Automated Trading System</i>	July 2019 – Sep 2019
<ul style="list-style-type: none">Conducted research on high-frequency price impact and high-frequency execution strategy	
Tachyon Trading , Seoul, South Korea <i>Co-founder & Head of IT, High-frequency trading & market making</i>	May 2012 – Jun 2015
<ul style="list-style-type: none">Developed trading strategies for Kospi200 & Nikkei index futures and optionsDeveloped a low-latency trading platform including simulation/analysis tools	
Yonhap Infomax , Seoul, South Korea <i>Developer, Financial market data vendor & news agency</i>	Feb 2009 – Dec 2011
<ul style="list-style-type: none">Served alternative military serviceDeveloped financial data visualization/analysis tools & mobile apps	

TEACHING

Operations Research: Stochastic Modeling	Fall 2021, Fall 2022, Fall 2023
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

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