Taehyun Hwang

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Contact Information

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Research Interests

Sequential decision making, contextual bandits, reinforcement learning, statistical machine learning

Experience

- Postdoctoral researcher (Supervisor: Min-hwan Oh)
  Research Institute for Data Science, Seoul National University — May. 2025 - present
  Graduate School of Data Science BK21, Seoul National University — Mar. 2025 - Apr. 2025
- Research assistant (Supervisor: Yongdo Lim & Miklos Palfia)
  Institute of Basic Science, Sungkyunkwan University — Sept. 2018 - Feb. 2020

Education

Seoul National University — Mar. 2020 - Feb. 2025

Ph.D in Data Science

Advisor: Min-hwan Oh

Thesis: *Efficient Exploration for Sequential Decision Making with Non-linear Function Approximation*

Sungkyunkwan University — Sept. 2016 - Aug. 2018

M.S in Mathematics

Advisor: Yongdo Lim / Co-advisor: Rhee Man Kil

Thesis: *Combination of Gaussian Kernel Function Networks for Traffic Flow Prediction*

Kyungpook National University — Mar. 2010 - Aug. 2016

B.S in Mathematics (Graduated with the highest honor)

Minor: Business Administration

Publications (* denotes equal contribution)

[7] **Tractable Multinomial Logit Contextual Bandits with Non-Linear Utilities.**
Taehyun Hwang, Dahngoon Kim, and Min-hwan Oh
*Advances in Neural Information Processing Systems 39 (**NeurIPS**)*, 2025
• Best Paper Award, Korean Artificial Intelligence Association 2025 Summer Conference

[6] **Lasso Bandit with Compatibility Condition on Optimal Arm.**
Harin Lee*, **Taehyun Hwang***, and Min-hwan Oh
*The Thirteenth International Conference on Learning Representations (**ICLR**)*, 2025
• Outstanding Paper Award, Korean Artificial Intelligence Association 2024 Summer Conference
• NRF President's Award (2nd Prize), 2024 K-DS Conference Research Presentation

[5] **Randomized Exploration for Reinforcement Learning with Multinomial Logistic Function Approximation.**
Wooseong Cho*, **Taehyun Hwang***, Joongkyu Lee, and Min-hwan Oh
*Advances in Neural Information Processing Systems 38 (**NeurIPS**)*, 2024
• Outstanding Paper Award, Korean Artificial Intelligence Association 2023 Summer Conference

[4] **Model-based Reinforcement Learning with Multinomial Logistic Function Approximation.**
Taehyun Hwang and Min-hwan Oh
*Proceedings of the 37th AAAI Conference on Artificial Intelligence (**AAAI**), 2023.*
▶ Oral presentation in main technical session

[3] **Combinatorial Neural Bandits.**
Taehyun Hwang*, Kyuwook Chai*, and Min-hwan Oh
*Proceedings of the 40th International Conference on Machine Learning (**ICML**), 2023*
• Outstanding Paper Award, Korean Artificial Intelligence Association 2022 Summer Conference

[2] **Deep Learning Aided Evaluation for Electromechanical Properties of Complexly Structured Polymer Nanocomposites.**
Kyungmin Baek, **Taehyun Hwang**, Wonseok Lee, Hayoung Chung, and Maenghyo Cho
Composites Science and Technology, 109661, 2022.

[1] **Estimation of Jamming Parameters based on Gaussian Kernel Function Networks.**
Taehyun Hwang, Rhee Man Kil, Hyun Ku Lee, Jung Ho Kim, Jae Heon Ko, Jeil Jo, and Junghoon Lee
Journal of the Korea Institute of Military Science and Technology 23 (1), 1-10, 2020.

Industrial Projects

- Development of Analysis Model to Explore Test Process Equipment Combination and Improve Flexible Test Performance.
  Director: Prof. Min-hwan Oh — Mar. - Sep. 2022
  Funded by *SK hynix*
- A Study on the Algorithms for Estimating the Parameters of Autonomous Jamming Technique.
  Director: Prof. Rhee Man Kil — Apr. - Dec. 2018
  Funded by *Agency for Defense Development* and *LIG Nex1*
- An Industrial Problem Solving Project Using Mathematical Data Analysis.
  Director: Prof. Yongdo Lim — May. - Sept. 2017
  Funded by *National Institute for Mathematical Sciences*

Invited Talks & Conference Presentation

"Tractable Multinomial Logit Contextual Bandits with Non-Linear Utilities"
• K-DATA SCIENCE Conference Research Presentation, Daegu — Sep. 2025

"Efficient Exploration Algorithms for Reinforcement Learning with Multinomial Logistic Function Approximation"
• Kyungpook National University, Department of Mathematics — Nov. 2024

"*Sequential Decision Making Algorithms with Function Approximation*"
• INFORMS APS PhD Student Showcase, Seattle — Oct. 2024

"*Lasso Bandit with Compatibility Condition on Optimal Arm*"
• Korean AI Association (KAIA) Summer Conference, Pyeongchang — Aug. 2025
• Conference of Korea Computer Congress (KCC), Jeju — July. 2025
• INFORMS 2024 Annual meeting, Seattle — Oct. 2024
• SNU-KAIST AL/ML Theory Workshop, Gangneung — Aug. 2024

"*Introduction to Online Decision Making*"
• Sungkyunkwan University, Department of Mathematics — Nov. 2023

"*Neural Contextual Bandits from Single Action to Combinatorial Actions*"
• SK Telecom Market Top AI Course, SK Telecom Tower — July 2023

"*Model-based Reinforcement Learning with Multinomial Logistic Function Approximation*"
- Conference of Korea Software Congress (KSC), Busan — Dec. 2023
- Conference of Korea Data Mining Society (KDMS), Gangneung-Wonju National University — June 2023
- AAAI 2023, Washington D.C. — Feb. 2023
- KAIA & NAVER Joint Conference, NAVER 1784 (Seungnam) — Nov. 2022
- INFORMS 2022 Annual meeting, Indianapolis — Oct. 2022

"*Combinatorial Neural Bandits*"
- Advanced neuroimaging and AI 2024, Seoul National University — June 2024
- AI Seoul 2024, Seoul City Hall — Feb. 2024
- Conference of Korean Statistical Society (KSS), Sungshin Women's University — Dec. 2023
- AIIS Retreat 2023, Seoul National University — Nov. 2023
- Conference of Korea Data Mining Society (KDMS), Busan — Aug. 2022
- Conference of Korean Artificial Intelligence Association (KAIA), Jeju — Aug. 2022
- INFORMS 2021 Annual meeting, Anaheim (Virtual) — Oct. 2021

"*A Gaussian Kernel Function Network for Traffic Flow Prediction*"
- Korean Mathematical Society (KMS) 2019 Annual meeting, Hongik University — Oct. 2019

"*Mathematics and Machine learning*"
- Kongju National University, Department of Applied Mathematics — Sept. 2019

Scholarships and Awards

- **Top Reviewer**, NeurIPS — Dec. 2025
- **Best Paper Award**, Korean Artificial Intelligence Association — Aug. 2025
- **Top Reviewer**, ICML — July. 2025
- **Ascending SNU Future Leader Fellowship**, Seoul National University — May. 2025 - Apr. 2026
- **Best Reviewer**, AISTATS — May. 2025
- **NRF President's Award (2nd Prize)**, K-DS Conference Research Presentation — Nov. 2024
- **Outstanding Paper Award**, Korean Artificial Intelligence Association — Aug. 2024
- **YOULCHON AI Star Scholarship**, Youlchon Foundation — Aug. 2023
- **Outstanding Paper Award**, Korean Artificial Intelligence Association — July 2023
- **AAAI Student Scholarship**, AAAI — Feb. 2023
- **Outstanding Paper Award**, Korean Artificial Intelligence Association — Aug. 2022

Teaching Experience

- **Teaching Assistant** at Seoul National University
  Data Science & Reinforcement Learning, Foundation of Data Science, Math for Data Science
- **Teaching Assistant** at Sungkyunkwan University
  Calculus I/II, *Linear Algebra, Discrete Mathematics, Topics in Algebra (Lie Algebra)*

Academic Services

- **Conference Reviewer & Program Committee**
  ICML (2023-2025), **NeurIPS** (2022-2025), **ICLR** (2024-2026), **AAAI** (2025-2026), **AISTATS** (2025-2026)