Taehyun Hwang

Contact Information

Graduate School of Data Science
Seoul National University
1 Gwanak-ro, Gwanak-gu, Seoul, South Korea, 08826

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Research Interests

Sequential decision making, Statistical machine learning, Optimization for machine learning

Experience

- **Seoul National University**
  Postdoctoral Researcher (Supervisor: Min-hwan Oh)   Mar. 2025 - present

- **Sungkyunkwan University**
  Research Assistant (Supervisor: Yongdo Lim & Miklos Palfia)   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)

[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

"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"
- 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

• **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: 2025, 2024, 2023
  NeurIPS: 2024, 2023, 2022
  ICLR: 2025, 2024
  AAAI: 2025
  AISTATS: 2025