

CONTACT INFORMATION	Rm. 419 Graduate School of Data Science Seoul National University 1 Gwanak-ro, Gwanak-gu, Seoul, South Korea, 08826	minoh@snu.ac.kr https://minoh.io
ACADEMIC APPOINTMENT	Seoul National University , Seoul, South Korea Graduate School of Data Science Assistant Professor (Tenure Track)	September 2020–Present
RESEARCH INTERESTS	Sequential decision making under uncertainty, reinforcement learning, bandit algorithms, statistical machine learning	
EDUCATION	Columbia University , New York, NY, USA Ph.D., Operations Research / Data Science Specialization 2020 M.S., Operations Research (M.S./Ph.D. Track) 2016 Advisor: Garud Iyengar / Co-advisor: Assaf Zeevi Ph.D. Dissertation: Sequential Decision Making with Combinatorial Actions and High-Dimensional Contexts • INFORMS George B. Dantzig Dissertation Award Finalist, 2020 Columbia University , New York, NY, USA B.A., Mathematics–Statistics 2015 <i>Summa cum laude</i> Departmental Honors in Statistics <i>Phi Beta Kappa</i>	
REFEREED PUBLICATIONS	13. Sparsity-Agnostic Lasso Bandit. M. Oh, G. Iyengar, and A. Zeevi <i>Proceedings of the 38th International Conference on Machine Learning (ICML)</i> , to appear, 2021. • INFORMS Applied Probability Society Student Paper Award Finalist, 2020 12. Multinomial Logit Contextual Bandits: Provable Optimality and Practicality. M. Oh and G. Iyengar <i>Proceedings of the 35th AAAI Conference on Artificial Intelligence (AAAI)</i> , 2021. 11. Crowd Counting with Decomposed Uncertainty. M. Oh, P. Olsen, and K.N. Ramamurthy <i>Proceedings of the 34th AAAI Conference on Artificial Intelligence (AAAI)</i> , 11799–11806, 2020. 10. Thompson Sampling for Multinomial Logit Contextual Bandits. M. Oh and G. Iyengar <i>Advances in Neural Information Processing Systems (NeurIPS)</i> , 3145–3155, 2019.	

9. Sequential Anomaly Detection using Inverse Reinforcement Learning.

M. Oh and G. Iyengar

Proceedings of the 25th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining (KDD). 1480–1490, 2019.

- Oral presentation in research paper track (top 9% of total submissions)

8. Automatic event detection in basketball using Hidden Markov Models with energy based defensive assignment.

S. Keshri, M. Oh, S. Zhang, and G. Iyengar

Journal of Quantitative Analysis in Sports 15(2), 141–153, 2019.

7. Adaptive Pattern Matching with Reinforcement Learning for Dynamic Graphs.

H. Kanezashi, T. Suzumura, D. Garcia-Gasulla, M. Oh, and S. Matsuoka

IEEE International Conference on High Performance Computing, Data, and Analytics (HiPC), 92–101, 2018.

- Best Paper Award winner

6. Learning Graph Topological Features via GAN.

W. Liu, H. Cooper, M. Oh, P.Y. Chen, S. Yeung, F. Yu, T. Suzumura, G. Hu
IEEE Access, 7, 21834–21843, 133600, 2019.

Preliminary version appeared at *Workshop on Implicit Generative Models, International Conference on Machine Learning (ICML)*, 2017.

5. Efficient “Shotgun” Inference of Neural Connectivity from Highly Sub-sampled Activity Data.

D. Soudry, S. Keshri, P. Stinson, M. Oh, G. Iyengar, and L. Paninski

PLoS Computational Biology, 11 (10), e1004464, 2015.

4. Graphical Model for Basketball Match Simulation.

M. Oh, S. Keshri, and G. Iyengar

MIT Sloan Sports Analytics Conference, 2015.

- Finalist in Research Paper Competition (top 2% of total submissions)

PREPRINT PAPERS

3. Counting and Segmenting Sorghum Heads.

M. Oh, P. Olsen, and K.N. Ramamurthy

WORKING PAPERS

2. Unsupervised segmentation of neuroanatomy from multispectral images.

U. Sümbül, M. Oh, J. Wohlwend, D. Roossien Jr., F. Chen, N. Barry, A. Marblestone, J. Cunningham, D. Cai, E. Boyden, and L. Paninski.

1. Directed Exploration in PAC Model-free Reinforcement Learning.

M. Oh and G. Iyengar.

Preliminary version appeared at *Exploration in Reinforcement Learning Workshop, International Conference on Machine Learning (ICML)*, 2018.

- 2nd place winner, 2018 INFORMS Annual Meeting Poster Competition

INDUSTRY EXPERIENCE

IBM T. J. Watson Research Center, Yorktown Heights, NY, USA

Computational and Statistical Learning Group at IBM Research AI

Summer Research Intern

May–August 2018

Summer Research Intern

May–August 2017

HONORS AND
AWARDS

George B. Dantzig Dissertation Award Finalist , INFORMS	2020
Student Paper Award Finalist , INFORMS Applied Probability Society	2020
QSR Data Challenge Award Winner , INFORMS	2020
NAVER Doctoral Fellowship , NAVER Corporation	2020
CKGSB Doctoral Fellowship , Columbia University	2018–2020
Outstanding Teaching Assistant Award , Columbia University	2020
Professional Development Scholarship , Columbia University	2020
AAAI Student Scholarship , AAAI	2020
KSEA-KUSCO Scholarship , KSEA	2019
W. Edwards Deming Doctoral Fellowship , Columbia University	2018
Best Paper Award , IEEE International Conference on HiPC	2018
2nd Place Winner , INFORMS Annual Meeting Poster Competition	2018
Summa cum laude , Columbia University	2015
Statistics Departmental Honors , Columbia University	2015
Phi Beta Kappa Honor Society , Columbia University	2015
Travel Grant , Statistical & Applied Mathematical Sciences Institute	2014
John Northcott Scholarship , Columbia University	2012–2015
Dean’s List , Columbia University	2011–2015
Dean’s Scholarship , Columbia University	2011

TEACHING
EXPERIENCE

Seoul National University , Seoul, South Korea	
<i>Graduate School of Data Science</i>	
Data Science & Reinforcement Learning	Spring 2021
Special Lecture in Data Science: Reinforcement Learning	Fall 2020
Columbia University , New York, NY, USA	
<i>Columbia University Science Honors Program</i>	
Graduate Instructor	
Graph Theory by Example	Spring 2020
<i>Department of Industrial Engineering and Operations Research</i>	
Teaching Assistant	
IEOR 4720 — Deep Learning	Fall 2018
IEOR 4650 — Business Analytics	Spring 2017, Spring 2018
IEOR 4007 — Optimization Methods for FE	Fall 2017
IEOR 4404 — Simulation	Fall 2016
IEOR 3106/4106 — Stochastic Models	Fall 2015, Spring 2016

Guest Lecturer

IEOR 4650 — Business Analytics	Spring 2020
IEOR 4106 — Stochastic Models	Spring 2016

Department of Mathematics

Teaching Assistant (as undergraduate)

MATH 4106 — Modern Analysis I	Fall 2014
MATH 2010 — Linear Algebra	Spring 2014
MATH 1202 — Calculus IV	Fall 2013
MATH 1201 — Calculus III	Spring 2013

INVITED TALKS &
CONFERENCE
PRESENTATION

“Towards Real-Life Reinforcement Learning”

Korea Research Institute of Ships and Ocean Engineering	January 2021
Data Science Seminar, Seoul National University	August 2020

“Sparsity-Agnostic Lasso Bandit”

INFORMS 2020	November 2020
Virtual Conference on Reinforcement Learning for Real Life	June 2020

“Thompson Sampling for Multinomial Logit Contextual Bandits”

INFORMS 2020	November 2020
IFORS 2020 (postponed)	June 2020
NeurIPS 2019, Vancouver	December 2019
IBM Thomas J. Watson Research Center	November 2019
INFORMS Annual Meeting, Seattle	October 2019
INFORMS Workshop on Data Mining & Decision Analytics	October 2019

“Crowd Counting with Decomposed Uncertainty”

INFORMS 2020	November 2020
AAAI 2020, New York	February 2020
Deming Doctoral Fellowship Seminar, Columbia University	April 2019

“Multinomial Logit Contextual Bandits”

INFORMS Annual Meeting, Seattle	October 2019
MSOM Conference, Singapore	July 2019
ICML 2019, Long Beach	June 2019
RM&P Conference, Stanford University	June 2019
POMS Annual Conference, Washington D.C.	May 2019
Data Science Day, Columbia University	April 2019

“Sequential Anomaly Detection using Inverse Reinforcement Learning”

INFORMS Workshop on Data Science	October 2019
KDD 2019, Anchorage	August 2019

“Automatic Event Detection in Basketball using HMM with Energy based Defensive Assignment”

INFORMS Annual Meeting, Seattle	October 2019
POMS Annual Conference, Washington D.C.	May 2019
Data Science Society Seminar, Columbia University	April 2018
NESSIS, Harvard University	September 2017
IBM Thomas J. Watson Research Center	June 2017

“Directed Exploration in PAC Model-Free Reinforcement Learning”

INFORMS Annual Meeting, Phoenix	November 2018
Princeton Day of Optimization, Princeton University	September 2018
IBM Thomas J. Watson Research Center	August 2018
ICML 2018, Stockholm	July 2018

“Graphical Model for Basketball Match Simulation”

Data Science Day, Columbia University	April 2016
Sports Analytics Seminar, Columbia University	March 2016
Columbia EPIC Graduate Student Research Seminar	February 2016
MIT Sloan Sports Analytics Conference, Boston	February 2015

ACADEMIC & PROFESSIONAL SERVICES

Program Committee & Reviewer — KDD 2020, NeurIPS 2020, AAAI 2021, KDD 2021, ICML 2021, NeurIPS 2021

Journal Reviewer — Operations Research, Management Science, JQAS

Session Chair — INFORMS Annual Meeting 2021, INFORMS Annual Meeting 2019, INFORMS Workshop on Data Mining & Decision Analytics 2019

STUDENT ADVISING

Taehyun Hwang, Ph.D. Student in Data Science (Dec. 2020 – Present)

Hyunjun Choi, M.S. Student in Data Science (Dec. 2020 – Present)

Wooseok Jang, M.S. Student in Data Science (Dec. 2020 – Present)