
CONTACT INFORMATION	419 Graduate School of Data Science (Bldg 942) Seoul National University 1 Gwanak-ro, Gwanak-gu, Seoul, South Korea 08826	minoh@snu.ac.kr https://minoh.io
EDUCATION	Columbia University , New York, NY, USA Ph.D., Operations Research 2020 Ph.D. Specialization in Data Science Advisor: Garud Iyengar / Co-advisor: Assaf Zeevi Dissertation Title: 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>	
EMPLOYMENT	Seoul National University , Seoul, South Korea Graduate School of Data Science Assistant Professor September 2020–Present IBM T. J. Watson Research Center , Yorktown Heights, NY, USA Computational and Statistical Learning Group at IBM Research AI Research Intern May–August 2018 Research Intern May–August 2017	
RESEARCH INTERESTS	Sequential decision making under uncertainty, reinforcement learning, contextual bandits, statistical machine learning	
PREPRINT PAPERS	13. Sparsity-Agnostic Lasso Bandit. M. Oh, G. Iyengar, and A. Zeevi • INFORMS Applied Probability Society Student Paper Award Finalist, 2020 12. Counting and Segmenting Sorghum Heads. M. Oh, P. Olsen, and K.N. Ramamurthy	
REFEREED PUBLICATIONS	11. 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> , to appear, 2021. 10. 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.	

9. **Thompson Sampling for Multinomial Logit Contextual Bandits.**
M. Oh and G. Iyengar
Advances in Neural Information Processing Systems (NeurIPS), 3145–3155, 2019.
 8. **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)
 7. **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.
 6. **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
 5. **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.
 4. **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.
 3. **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)
-
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

WORKING
PAPERSTEACHING
EXPERIENCE**Instructor**, Columbia University

Graph Theory by Example, Science Honors Program

Spring 2020**Guest Lecturer**, Columbia University

IEOR 4650 — Business Analytics

Spring 2020

IEOR 4106 — Stochastic Models

Spring 2016

Teaching Assistant, Columbia University
Department of Industrial Engineering and Operations Research

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

Teaching Assistant (as undergraduate), Columbia University
Department of Mathematics

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

Teaching Assistant (as undergraduate), Columbia Business School

Doctoral Machine Learning Workshop	Summer 2014
------------------------------------	-------------

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
AAAI Student Scholarship , AAAI	2020
NeurIPS Travel Award , Neural Information Processing Systems	2019
KDD Student Travel Award , ACM SIGKDD	2019
KSEA-KUSCO Scholarship , KSEA	2019
W. Edwards Deming Doctoral Fellowship , Columbia University	2018–2019
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

INVITED TALKS & CONFERENCE PRESENTATION	“Sparsity-Agnostic Lasso Bandit”	
	INFORMS 2020	November 2020
	Virtual Conference on Reinforcement Learning for Real Life	June 2020
	“Towards Real-Life Reinforcement Learning”	
	Data Science Seminar, Seoul National University	August 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 (upcoming)	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** — KDD 2020, AAAI 2021**Conference Reviewer** — NeurIPS 2020**Journal Reviewer** — Operations Research, Management Science, JQAS**Session Chair** — INFORMS Annual Meeting 2019; INFORMS Workshop on Data Mining & Decision Analytics 2019