

# Hongseok Namkoong

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## Employment

Assistant Professor, Decision, Risk, and Operations Division, Columbia Business School, 2020—Present  
Research Scientist, Facebook Core Data Science, 2019–2020  
Research Assistant, Peter W. Glynn and John C. Duchi, Stanford University, 2014–2019  
Intern, DPT Capital, Summer 2012  
Research Assistant, Woosung Kim, KAIST, 2011–2013

## Education

Ph.D. Management Science and Engineering, Stanford University, 2019  
Advisors: John C. Duchi and Peter W. Glynn  
M.S. Statistics, Stanford University, 2017  
B.S. Summa Cum Laude. Industrial Engineering and Mathematics, KAIST, 2013

## Honors & Awards

Best Student Paper Award for “Statistics of Robust Optimization: A Generalized Empirical Likelihood Approach”, *INFORMS Applied Probability Society*, 2018  
Best Paper Runner Up Award for “Fairness Without Demographics in Repeated Loss Minimization” (out of 2473 submissions), *International Conference on Machine Learning (ICML)*, 2018  
Best Paper Award for “Variance Based Regularization with Convex Objectives” (out of 3240 submissions), *Neural Information Processing Systems (NeurIPS)*, 2017  
Samsung Fellowship, 2013–2018  
Department Fellowship, Management Science and Engineering, Stanford, 2013–2018  
KAIST President’s Award (graduated top of class in the School of Engineering), 2013  
Undergraduate Research Award, First Place, Department of Industrial and Systems Engineering, 2012

## Teaching

B8101: Business Analytics II (MBA, MS), Columbia University  
B9145: Reliable Statistical Learning (PhD), Columbia University

## Publications<sup>1</sup>

Manuscripts under review

1. J. C. Duchi, T. Hashimoto, and H. Namkoong. Distributionally robust losses against mixture covariate shifts. *Major revision in Operations Research*, 2021.

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<sup>1</sup>Customary authorship ordering is by alphabetical order. Name\* denotes equal contribution.

2. S. Yadlowsky, H. Namkoong, S. Basu, J. Duchi, and L. Tian. Bounds on the conditional and average treatment effect with unobserved confounding factors. *Major revision in Annals of Statistics*, 2020.
3. S. Jeong and H. Namkoong. Robust causal inference under covariate shift via worst-case subpopulation treatment effect. *Under review*, 2021.
4. H. Namkoong, S. Daulton, and E. Bakshy. Distilled thompson sampling: Practical and efficient thompson sampling via imitation learning. *Under review*, 2021. Selected for an oral presentation at the Neurips 2020 OfflineRL Workshop.
5. M. Li, H. Namkoong, and S. Xia. Evaluating model performance under worst-case subpopulations. *Under review*, 2021.

## Journal publications

1. J. C. Duchi and H. Namkoong. Learning models with uniform performance via distributionally robust optimization. *Annals of Statistics*, 2021.
2. J. C. Duchi, P. W. Glynn, and H. Namkoong. Statistics of robust optimization: A generalized empirical likelihood approach. *Mathematics of Operations Research*, 2021.
3. J. C. Duchi and H. Namkoong. Variance-based regularization with convex objectives. *Journal of Machine Learning Research*, 2019.

## Technical reports

1. A. Sinha\*, H. Namkoong\*, R. Volpi, and J. Duchi. Certifying some distributional robustness with principled adversarial training. *Technical Report*, 2020.
2. H. Namkoong, J. C. Duchi, and P. W. Glynn. Proofs for empirical likelihood with general f-divergences. *Technical Report*, 2018.

## Refereed conference proceedings<sup>2</sup>

1. H. Namkoong\*, R. Keramati\*, S. Yadlowsky\*, and E. Brunskill. Off-policy policy evaluation for sequential decisions under unobserved confounding. In *Advances in Neural Information Processing Systems 33*, 2020.
2. S. Jeong and H. Namkoong. Robust causal inference under covariate shift via worst-case subpopulation treatment effect. In *Conference on Learning Theory*, 2020.
3. M. O’Kelly\*, A. Sinha\*, H. Namkoong\*, J. Duchi, and R. Tedrake. Scalable end-to-end autonomous vehicle testing via rare-event simulation. In *Advances in Neural Information Processing Systems 31*, 2018.
4. R. Volpi\*, H. Namkoong\*, J. Duchi, V. Murino, and S. Savarese. Generalizing to unseen domains via adversarial data augmentation. In *Advances in Neural Information Processing Systems 31*, 2018.
5. T. Hashimoto, M. Srivastava, H. Namkoong, and P. Liang. Fairness without demographics in repeated loss minimization. In *International Conference on Machine Learning*, 2018. Best Paper Runner-up Award.
6. A. Sinha\*, H. Namkoong\*, and J. Duchi. Certifiable distributional robustness with principled adversarial training. In *International Conference on Learning Representations*, 2018. Selected for a full oral presentation; 2% of submissions.

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<sup>2</sup>Papers displayed in gray are superseded by long versions.

7. H. Namkoong and J. C. Duchi. Variance regularization with convex objectives. In *Advances in Neural Information Processing Systems 30*, 2017. Best Paper Award.
8. H. Namkoong, A. Sinha, S. Yadlowsky, and J. C. Duchi. Adaptive sampling probabilities for non-smooth optimization. In *International Conference on Machine Learning*, pages 2574–2583, 2017.
9. H. Namkoong and J. C. Duchi. Stochastic gradient methods for distributionally robust optimization with  $f$ -divergences. In *Advances in Neural Information Processing Systems 29*, 2016.

## Invited Talks

- 2021 Workshop on “distributional robustness, validity, causality, and generalizability”, Joint Statistical Meetings
- 2021 Empirical Inference Department, Max Planck Institute for Intelligent Systems
- 2021 Department of Mathematics, KAIST
- 2021 School of Data Science, Seoul National University
- 2021 Data Science Institute, Columbia University
- 2021 Decision Science Group, McCombs School of Business, UT Austin
- 2020 Samsung Advanced Institute of Technology, Seoul
- 2020 Google Brain, Cambridge
- 2020 Cancelled due to COVID-19: Conference on Information Sciences and Systems, American Causal Inference Conference, SIAM Conference on Mathematics of Data Science
- 2019 Uber Marketplace and Uber Eats, San Francisco
- 2019 OIT Division, Graduate School of Business, Stanford University
- 2019 Three invited talks, INFORMS Annual Meeting (Seattle, WA)
- 2019 Stitchfix, San Francisco
- 2019 Department of Computer Science, University of Wisconsin-Madison
- 2019 Department of Industrial and Systems Engineering, University of Wisconsin-Madison
- 2019 School of Operations Research and Industrial Engineering, Cornell Tech
- 2019 Machine Learning and Statistics Group, Microsoft Research New England
- 2019 Operations and Statistics Group, MIT Sloan School of Management
- 2019 Department of Operations Research and Industrial Engineering, UT Austin
- 2019 Machine Learning Department, Carnegie Mellon University
- 2019 Heinz College, Carnegie Mellon University
- 2019 Department of Industrial Engineering and Operations Research, Columbia University
- 2019 Decisions, Risk and Operations Division, Columbia Business School
- 2019 Department of Electrical and Computer Engineering, Purdue University
- 2019 Operations Management Division, Booth School of Business, University of Chicago
- 2019 Data Sciences and Operations, Marshall School of Business, University of Southern California
- 2018 Department of Industrial and Operations Engineering, University of Michigan
- 2018 Three invited talks, INFORMS Annual Meeting (Phoenix, AZ)
- 2018 Oral Presentation, International Conference on Learning Representations (Vancouver, Canada)
- 2017 Oral Presentation, Neural Information Processing Systems (Long Beach, CA)
- 2016 Department of Industrial and Systems Engineering, KAIST
- 2016 Young Researchers Workshop, School of ORIE, Cornell University

## Professional Service

### Reviewing

**Journals** *Operations Research, Management Science, Journal of the American Statistical Association, Mathematical Programming, Journal of Machine Learning Research, Transactions on Pattern Analysis and Machine Intelligence, Automatica.*

**Conferences** *Neural Information Processing Systems, Conference on Learning Theory*

Program committee and workshop organization

2021 Area chair, NeurIPS

2021 Co-organizer, JSM invited session on “distributional robustness, validity, causality, and generalizability”

2019 Co-organizer, INFORMS invited session on “AI and machine learning”

**Outside Activities** Columbia Business School requires faculty members to disclose any activities that might present a real or apparent conflict of interest. I currently have no outside activities fitting this description.