

# 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, Woochang 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 (NIPS)*, 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

## Publications<sup>1</sup>

### Refereed Journal Publications and Preprints

1. J. C. Duchi and H. Namkoong. Variance-based regularization with convex objectives. *Journal of Machine Learning Research*, 2019. Conference version won NeurIPS 2018 Best Paper Award.
2. J. C. Duchi and H. Namkoong. Learning models with uniform performance via distributionally robust optimization. *Annals of Statistics*, 2020.

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

3. J. C. Duchi, P. W. Glynn, and H. Namkoong. Statistics of robust optimization: A generalized empirical likelihood approach. *Mathematics of Operations Research*, 2020. INFORMS APS Best Student Paper Award.
4. J. Duchi, H. Namkoong, A. Sinha, and R. Volpi. Certifying some distributional robustness with principled adversarial training. *Under review*, 2018. Conference version selected for full oral presentation at ICLR (2% of submissions).
5. H. Namkoong, J. C. Duchi, and P. W. Glynn. Statistical estimation of large deviation rates: Statistical estimation of large deviation rates for i.i.d. random walks. *Working paper*, 2018.
6. M. O’Kelly\*, A. Sinha\*, H. Namkoong\*, J. Duchi, R. Tedrake, and G. Peter. Scalable end-to-end autonomous vehicle testing via rare-event simulation. *To be submitted to ACM Transactions on Modeling and Computer Simulation*, 2020. Conference version appeared in NeurIPS 2018.
7. J. C. Duchi, T. Hashimoto, and H. Namkoong. Distributionally robust losses against mixture covariate shifts. *Under review*, 2020.
8. S. Yadlowsky, H. Namkoong, S. Basu, J. Duchi, and L. Tian. Bounds on the conditional and average treatment effect under bounded selection on unobservables. *Under review*, 2020.
9. S. Jeong and H. Namkoong. Robust causal inference under covariate shift via worst-case subpopulation treatment effect. *Under review*, 2020. Conference version appeared in COLT 2020.
10. H. Namkoong, S. Daulton, and E. Bakshy. Distilled thompson sampling: Practical and efficient thompson sampling via imitation learning. *Under review*, 2020.

## Refereed Conference Proceedings

1. H. Namkoong, R. Keramati, S. Yadlowsky, and E. Brunskill. Off-policy policy evaluation for sequential decisions under unobserved confounding. *Under review*, 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 full oral Presentation (2% of submissions).
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

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, University of Texas 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

## Teaching

Instructor, B9145: Reliable Statistical Learning, Fall 2020, Columbia University.

Head TA, Stochastic Modeling, Winter 2018 (taught by Peter Glynn), Stanford University.

TA, Information Theory and Statistics, Winter 2016 (taught by John Duchi), Stanford University.

Guest lectures at Stanford: Stochastic Modeling in Winter 2018 taught by Peter Glynn, First Year Seminar in Winter 2018, Information Theory and Statistics in Winter 2016 taught by John Duchi.

## Professional Service

**Journal Reviewing** *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.*

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

**Workshop and Symposium Organization** Session Chair, *AI and ML* session at the *INFORMS Annual Meeting 2019* with Nathan Kallus

**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.