

# DANA YANG

Postdoctoral Associate

Decision Science Area, The Fuqua School of Business, Duke University

Supervisor: Prof. Jiaming Xu

Research interests: The broad area of high-dimensional statistics and machine learning, including random network analysis, optimality analysis, Bayesian analysis, oracle inequalities, nonparametric estimation, convergence analysis for algorithms, rapidly mixing Markov chains, ethics and safety in machine learning.

## EDUCATION

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**Yale University**

2014 - 2019

*Ph.D. in Statistics & Data Science*

Advisors: Prof. David Pollard, Prof. John Lafferty, Prof. Yihong Wu

Thesis: “A few topics in statistics”

**Yale University**

2013-2014

*M.A. in Statistics*

**Tsinghua University**

2009-2013

*B.S. in Mathematics*

**University of Washington**

Spring 2012

*Exchange student in Mathematics & Statistics*

## AWARDS AND HONORS

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**Francis J. Anscombe Award for Academic Excellence**

Department of Statistics and Data Science, Yale University

May 2019

## PUBLICATIONS AND PREPRINTS

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1. Jiaming Xu, Kuang Xu and Dana Yang, “Optimal query complexity for private sequential learning against eavesdropping”, *AISTATS*, 2021.
2. Victor-Emmanuel Brunel, Jason M. Klusowski and Dana Yang, “Estimation of convex supports from noisy measurements”, *Bernoulli*, 2020.
3. Pierre C. Bellec and Dana Yang, “The cost-free nature of optimally tuning Tikhonov regularizers and other ordered smoothers”, *ICML*, 2020.
4. Jian Ding, Yihong Wu, Jiaming Xu and Dana Yang, “Consistent recovery threshold of hidden nearest neighbor graphs”, *COLT*, 2020. (Longer Version under minor revision at *IEEE Transaction on Information Theory*)
5. Dana Yang, “Posterior asymptotic normality for an individual coordinate in high-dimensional linear regression”, *Electronic Journal of Statistics*, 13(2), pages 3082-3094, 2019.
6. Jason M. Klusowski, Dana Yang and W.D. Brinda, “Estimating the coefficients of a mixture of two linear regressions by expectation maximization”, *IEEE Transactions on Information Theory*, 65(6), pages 3515-3524, 2019.
7. W.D. Brinda, Jason M. Klusowski and Dana Yang, “Hölder’s identity”, *Statistics & Probability Letters*, Volume 148, Pages 150-154, 2019.

8. David Pollard and Dana Yang, “Rapid mixing of a Markov chain for the exponentially weighted aggregation estimator”, *arXiv preprint arXiv: 1909.11773*, 2019.
9. Dana Yang, John Lafferty and David Pollard “Fair quantile regression”, *arXiv preprint arXiv: 1907.08646*, 2019.
10. Kun Tian, Xiaoqian Yang, Qin Kong, Changchuan Yin, Rong L. He and Stephen S-T Yau, “Two dimensional Yau-Hausdorff distance with applications on comparison of DNA and protein sequences”, *PloS one*, 10(9), 2015.
11. Sören R. Künnel, David Pollard and Dana Yang, “Remarks on Kneip’s linear smoothers”, *arXiv preprint arXiv: 1405.1744*, 2014.

## RESEARCH EXPERIENCE

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**Postdoctoral Associate at The Fuqua School of Business, Duke University** Aug 2019-present

Supervisor: Prof. Jiaming Xu, Assistant Professor at the Fuqua School of Business, Duke University

**Visiting Postdoc at The Simons Institute for the Theory of Computing** Aug 2020-Dec 2020

Program: Probability, Geometry, and Computation in High Dimensions

**Research Assistant at Emonet Lab, Yale University**

Mar 2016-Mar 2017

Supervisor: Prof. Thierry Emonet, Associate Professor of Molecular, Cellular & Developmental Biology and Physics, Yale University

Project: Detection of behavioral patterns of Escherichia coli (E. coli) bacteria.

## TEACHING EXPERIENCE

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Primary Instructor: responsible for designing and teaching a 25-lecture course.

- S&DS S107: Introduction to Statistics, Yale University, Summer 2017.

Teaching Fellow: responsible for holding recitations/office hours, grading, and occasionally giving lectures.

- S&DS 625: Statistical Case Studies, Yale University, Fall 2016.
- S&DS 610: Statistical Inference, Yale University, Fall 2016.
- S&DS 551: Stochastic Processes, Yale University, Spring 2016.
- S&DS 600: Advanced Probability, Yale University, Spring 2016.
- S&DS 538: Probability and Statistics, Yale University, Fall 2015.
- S&DS 661: Data Analysis, Yale University, Fall 2015.
- S&DS 600: Advanced Probability, Yale University, Spring 2015.
- S&DS 610: Statistical Inference, Yale University, Fall 2014.
- S&DS 103: Introduction to Statistics: Social Sciences, Yale University, Fall 2013.

Statistical Consultant: responsible for the computational interactions in weekly meetings mostly with Yale researchers

- S&DS 627: Statistical Consulting, Yale University, 2016-2019

## TALKS AND PRESENTATIONS

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<b>INFORMS Annual Meeting</b> <i>Optimal query complexity for private sequential learning against eavesdropping</i>	2020
<b>International Conference on Learning Theory (ICML)</b> <i>The cost-free nature of optimally tuning Tikhonov regularizers and other ordered smoothers</i>	2020
<b>Conference on Learning Theory (COLT)</b> <i>Consistent recovery threshold of hidden nearest neighbor graphs</i>	2020
<b>NeurIPS, Privacy in Machine Learning workshop (spotlight)</b> <i>Optimal query complexity for private sequential learning against eavesdropping</i>	2019
<b>Probability Seminar Series, Department of Mathematics, Duke University</b> <i>Rapid mixing of a Markov chain for the exponentially weighted aggregation estimator</i>	2019
<b>Decision Science Seminar Series, The Fuqua School of Business, Duke University</b> <i>A few extensions of bias correction techniques</i>	2019
<b>SMIL@Y Research Meeting, Yale University</b> <i>Fair quantile regression</i>	2018
<b>Joint Statistical Meetings (JSM)</b> <i>A Bernstein-von Mises theorem in high-dimensional linear regression</i>	2016
<b>Yale Probability Network Group</b> <i>Remarks on the Bernstein-von Mises theorem</i> <i>Remarks on Kneip's linear smoothers</i>	2015,2014

## PROGRAMMING SKILLS

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R, Python

- Top 3000 competitors, Google Code Jam.
- Second prize in the National Computing Olympiad, China.

## SERVICE

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<b>Yale S&amp;DS M.A. admissions committee</b> <i>Reviewer: one of four committee members handling over 300 applications each year and making admission recommendations.</i>	2015-2019
<b>Yale YHack competition</b> <i>Judge: reviewing around 50 submitted computational projects.</i>	2018
<b>Yale S&amp;DS Graduate Student Seminar Series</b> <i>Organizer: scheduling talks and leading discussions.</i>	2018
<b>Reviewer for ACM Conference on Economics and Computation (EC'20)</b>	2020
<b>Reviewer for Artificial Intelligence and Statistics (AISTATS)</b>	2020
<b>Reviewer for Bernoulli</b>	2015, 2019