

VICTOR VEITCH

victorveitch@gmail.com · victorveitch.com · github.com/vveitch

I am scientist working at the intersection of Machine Learning and Statistics. I am an Assistant Professor of Statistics and Data Science at the University of Chicago (Jan 1st, 2021) and a Research Scientist at Google Cambridge. My recent work addresses the use of machine learning methods for causal inference. I am also interested in the development of safe and credible machine learning.

EDUCATION

- 2013-2017 Ph.D. Statistics - **University of Toronto**
(SPARSE) EXCHANGEABLE RANDOM GRAPHS
Advisor: Daniel Roy
Committee: Radford Neal, Nancy Reid, Svante Janson
Statistical Society of Canada Pierre Robillard Award (best statistics thesis in Canada)
Doctoral Award for Excellence in Research (best statistics thesis at Toronto)
- 2011-2013 Masters of Mathematics - **University of Waterloo**
NEGATIVE QUASI-PROBABILITY IN THE CONTEXT OF QUANTUM COMPUTATION
Advisor: Joseph Emerson
Committee: Richard Cleve, Robert Koenig
Outstanding Achievement in Graduate Studies Award (mathematics faculty best thesis)
- 2006-2011 Bachelor of Science - **University of Waterloo**

PUBLICATIONS AND PREPRINTS

GOOGLE SCHOLAR · scholar.google.ca/citations?user=xkn_XZgAAAAJ&hl=en

- 2020 ADAPTING TEXT EMBEDDINGS FOR CAUSAL INFERENCE.
V. Veitch, D. Sridhar, and D. Blei. **UAI 2020**
- 2019 SENSE AND SENSITIVITY ANALYSIS: SIMPLE POST-HOC ANALYSIS OF BIAS DUE TO UNOBSERVED CONFOUNDING.
V. Veitch, and A. Zaveri. arxiv.org/abs/2003.01747
- 2019 ADAPTING NEURAL NETWORKS FOR THE ESTIMATION OF TREATMENT EFFECTS.
C. Shi, D. Blei, and V. Veitch. Corresponding author **NeurIPS 2019**
- 2019 USING EMBEDDINGS TO CORRECT FOR UNOBSERVED CONFOUNDING IN NETWORKS.
V. Veitch, Y. Wang, and D. Blei. **NeurIPS 2019**
- 2019 EMPIRICAL RISK MINIMIZATION AND STOCHASTIC GRADIENT DESCENT FOR RELATIONAL DATA.
V. Veitch, M. Austern, W. Zhou, D. Blei, and P. Orbanz. **AISTATS 2019** (Oral)
- 2019 NON-VACUOUS GENERALIZATION BOUNDS AT THE IMAGENET SCALE: A PAC-BAYESIAN COMPRESSION APPROACH .
W. Zhou, V. Veitch, M. Austern, R. Adams, and P. Orbanz. **ICLR 2019**
- 2018 THE HOLDOUT RANDOMIZATION TEST: PRINCIPLED AND EASY BLACK BOX FEATURE SELECTION.
W. Tansey, V. Veitch, H. Zhang, R. Rabadan, and D. Blei. [arXiv.org/abs/1811.00645](https://arxiv.org/abs/1811.00645)
- 2018 SAMPLING PERSPECTIVES ON (SPARSE) EXCHANGEABLE GRAPHS.
C. Borgs, J. Chayes, H. Cohn, V. Veitch Authors listed alphabetically
Annals of Probability Accepted Oct. 2018
- 2018 SAMPLING AND ESTIMATION FOR (SPARSE) EXCHANGEABLE GRAPHS.
V. Veitch, D.M. Roy. **Annals of Statistics** Accepted Oct. 2018
- 2017 EXCHANGEABLE MODELING OF RELATIONAL DATA: CHECKING SPARSITY, TRAIN-TEST SPLITTING, AND SPARSE EXCHANGEABLE POISSON MATRIX FACTORIZATION.
V. Veitch, E. Sharma, Z. Naulet, and D. Roy, [arXiv.org/abs/1712.02311](https://arxiv.org/abs/1712.02311)

PUBLICATIONS AND PREPRINTS CONT.

- 2017 AN ESTIMATOR FOR THE TAIL-INDEX OF GRAPHEX PROCESSES.
Z. Naulet, E. Sharma, V. Veitch, and D. Roy, arXiv.org/abs/1712.01745
Under review at Electronic Journal of Statistics (2019)
- 2015 THE CLASS OF RANDOM GRAPHS ARISING FROM EXCHANGEABLE RANDOM MEASURES.
V. Veitch, D.M. Roy. arxiv.org/abs/1512.03099
Under review at Journal of the American Statistical Association (2019)
- 2014 CONTEXTUALITY SUPPLIES THE MAGIC FOR QUANTUM COMPUTATION.
M. Howard, J. Wallman, V. Veitch, J. Emerson. **Nature** 510, 351355. doi:10.1038/nature13460
- 2013 THE WHOLE IS GREATER THAN THE SUM OF THE PARTS: ON THE POSSIBILITY OF PURELY STATISTICAL INTERPRETATIONS OF QUANTUM THEORY.
J. Emerson, D. Serbin, C. Sutherland, V. Veitch. arxiv.org/abs/1312.1345
- 2013 THE RESOURCE THEORY OF STABILIZER QUANTUM COMPUTATION.
V. Veitch et al. **New J. Phys.** 16 013009 doi:10.1088/1367-2630/16/1/013009
- 2013 EFFICIENT SIMULATION SCHEME FOR A CLASS OF QUANTUM OPTICS EXPERIMENTS WITH NON-NEGATIVE WIGNER REPRESENTATION.
V. Veitch et al. **New J. Phys.** 15 013037 doi:10.1088/1367-2630/15/1/013037
- 2013 NEGATIVE QUASI-PROBABILITY AS A RESOURCE FOR QUANTUM COMPUTATION.
V. Veitch et al. **New J. Phys.** 14 113011 doi:10.1088/1367-2630/14/11/113011

EMPLOYMENT

- 2020–present RESEARCH SCIENTIST
Google Research, Cambridge
- 2017–2020 DISTINGUISHED POSTDOCTORAL RESEARCH SCIENTIST
Department of Statistics, Columbia University
Advised by David Blei and Peter Orbanz
- 2016 MICROSOFT RESEARCH INTERN
Microsoft Research New England
Advised by Christian Borgs, Jennifer Chayes, and Henry Cohn

AWARDS AND HONORS

- 2018 Statistical Society of Canada Pierre Robillard Award
(best Canadian statistics Ph.D thesis)
- 2018 NSERC Postdoctoral Fellowship
(National Science and Engineering Research Council of Canada postdoctoral fellowship)
- 2018 Distinguished Postdoctoral Fellowship
(Columbia University Department of Statistics named postdoc)
- 2018 NeurIPS Top Reviewer
(top 218)
- 2017 University of Toronto Statistics Doctoral Award for Excellence in Research
(best Ph.D thesis)
- 2016 Best Oral Presentation at Statistical Society of Canada Meeting
- 2015 Best Theory Poster at 10th Conference on Bayesian Nonparametrics
- 2015 University of Toronto Statistical Sciences Teaching Assistant Award
- 2013 University of Waterloo Outstanding Achievement in Graduate Studies
(Mathematics faculty best thesis award)
- 2013 NSERC PGS-D
(National Science and Engineering Research Council doctoral award)
- 2013 Ontario Graduate Scholarship (declined)
- 2012 Ontario Graduate Scholarship
- 2011 Ontario Graduate Scholarship

TALKS

- 2019 Deep Learning for Causal Inference
Invited talk at Columbia University Medical Campus. New York, USA.
- 2019 Deep Learning for Causal Inference
Invited talk at Yahoo! research. New York, USA.
- 2019 Empirical Risk Minimization and Stochastic Gradient Descent for Relational Data
Invited talk at Columbia Statistics Student Seminar. New York, USA.
- 2019 Empirical Risk Minimization and Stochastic Gradient Descent for Relational Data
Oral presentation at AISTATS 2019. Naha, Japan.
- 2018 Empirical Risk Minimization and Stochastic Gradient Descent for Relational Data
Invited talk at Japanese Statistical Society. Tokyo, Japan.
- 2018 Sparse exchangeable graphs and relational empirical risk minimization
Pierre Robillard lecture. Montreal, Canada.
- 2018 Compression and Generalization in Deep Learning
Invited talk at CWI Amsterdam. Amsterdam, Netherlands
- 2018 Empirical risk minimization and stochastic gradient descent for relational data
Invited talk at Critical and Collective Effects in Graphs and Networks. Eindhoven, Netherlands
- 2017 Exchangeable Modeling of Relational Data
Invited talk at CMStatistics. London, England.
- 2017 (Sparse) exchangeable graphs
Invited talk at Northwestern probability seminar. Evanston, USA.
- 2017 Sampling and estimation for (sparse) exchangeable graphs
Invited talk at 11th Conference on Bayesian Nonparametrics. Paris, France.
- 2017 Sampling and estimation for (sparse) exchangeable graphs
Invited talk at Bayesian Inference in Stochastic Processes. Milano, Italy.
- 2017 (Sparse) exchangeable graphs and graph limits
Invited talk at Large Random Graphs. Bonn, Germany.
- 2017 (Sparse) exchangeable graphs
Invited talk at McGill Statistics Seminar. Montreal, Canada.
- 2016 Inference for Sparse Random Graphs
Invited talk at MIT CSAIL. Boston, United States.
- 2013 The Resource Theory of Stabilizer Computation
Invited talk at CIFAR Quantum Information meeting. Edmonton, Canada.
- 2013 Negative Quasi-Probability as a Resource for Quantum Computation.
Contributed talk at Quantum Information Processing. Beijing, China.

ORGANIZING

- 2019 "Human-aligned AI" Official NeurIPS Social
NeurIPS 2019 (with Claudia Shi and Adam Gleave)
- 2019 "Data Science Institute Speaker Series" Speaker Series
Columbia University (with Dhanya Sridhar and Aaron Schein)
- 2016 "Teaching with Shiny Apps" Workshop
Statistical Society of Canada meeting (with Alison Gibbs and John Braun)