

Eric Nalisnick

Postdoctoral Research Associate
University of Cambridge
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Education

Ph.D. Computer Science	University of California, Irvine	2013-2018
M.S. Computer Science	Lehigh University	2012-2013
B.S. Computer Science & English Literature	Lehigh University	2008-2012

Employment

Postdoctoral Research Associate	University of Cambridge
Supervisors: Zoubin Ghahramani (on leave), José Miguel Hernández-Lobato	Fall 2018 to Present
Research Scientist (one day per week)	DeepMind February 2019 to Present
Research Scientist Intern Supervisor: Balaji Lakshminarayanan	DeepMind Summer 2018
Graduate Student Researcher Supervisor: Padhraic Smyth	University of California, Irvine Fall 2013 to Spring 2018
Applied Scientist Intern Supervisors: Vijai Mohan, Eiman Elnahrawy	Amazon Fall 2016
Research Intern Supervisor: Hugo Larochelle	Twitter Summer 2016
Research Intern Supervisors: Rich Caruana, Nick Craswell	Microsoft Summer 2015
Research Scientist Intern Supervisors: Vijai Mohan, Rahul Bhagat	Amazon Summer 2014

Publications

* Denotes equal contribution

PRE-PRINTS / WORKING PAPERS

1. G. Papamakarios*, E. Nalisnick*, D. J. Rezende, S. Mohamed, and B. Lakshminarayanan. Normalizing Flows for Probabilistic Modeling and Inference. *ArXiv e-Prints*, 2019.

CONFERENCE ARTICLES

2. R. Pinsler, J. Gordon, **E. Nalisnick**, and J. M. Hernández-Lobato. Bayesian Batch Active Learning as Sparse Subset Approximation. In *Advances in Neural Information Processing Systems* (NeurIPS), 2019.
3. **E. Nalisnick**, J. M. Hernández-Lobato, and P. Smyth. Dropout as a Structured Shrinkage Prior. In *Proceedings of the 36th International Conference on Machine Learning* (ICML), 2019.
4. **E. Nalisnick***, A. Matsukawa*, Y. W. Teh, D. Gorur, and B. Lakshminarayanan. Hybrid Models with Deep and Invertible Features. In *Proceedings of the 36th International Conference on Machine Learning* (ICML), 2019.
5. **E. Nalisnick**, A. Matsukawa, Y. W. Teh, D. Gorur, and B. Lakshminarayanan. Do Deep Generative Models Know What They Don't Know? In *Proceedings of the 7th International Conference on Learning Representations* (ICLR), 2019.
6. D. Ji, **E. Nalisnick**, Y. Qian, R. Scheuermann, and P. Smyth. Bayesian Trees for Automated Cytometry Data Analysis. In *Proceedings of Machine Learning for Healthcare* (MLHC), 2018.
7. **E. Nalisnick** and P. Smyth. Learning Priors for Invariance. In *Proceedings of the 21st International Conference on Artificial Intelligence and Statistics* (AISTATS), 2018.
8. **E. Nalisnick** and P. Smyth. Learning Approximately Objective Priors. In *Proceedings of the 33rd Conference on Uncertainty in Artificial Intelligence* (UAI), 2017.
9. **E. Nalisnick** and P. Smyth. Stick-Breaking Variational Autoencoders. In *Proceedings of the 5th International Conference on Learning Representations* (ICLR), 2017.
10. **E. Nalisnick**, B. Mitra, N. Craswell, and R. Caruana. Improving Document Ranking with Dual Word Embeddings. In *Proceedings of the 25th World Wide Web Conference* (WWW), 2016.
11. **E. Nalisnick** and H. Baird. Character-to-Character Sentiment Analysis in Shakespeare's Plays. In *Proceedings of the 51st Annual Meeting of the Association for Computational Linguistics* (ACL), 2013.
12. **E. Nalisnick** and H. Baird. Extracting Sentiment Networks from Shakespeare's Plays. In *Proceedings of the 12th International Conference on Document Analysis and Recognition* (ICDAR), 2013.

PEER-REVIEWED WORKSHOP ARTICLES

13. **E. Nalisnick**, A. Matsukawa, Y. W. Teh, and B. Lakshminarayanan. Detecting Out-of-Distribution Inputs to Deep Generative Models Using Typicality. *Bayesian Deep Learning*, NeurIPS 2019.
14. **E. Nalisnick** and J. M. Hernández-Lobato. Automatic Depth Determination for Bayesian ResNets. *Bayesian Deep Learning*, NeurIPS 2018.
15. **E. Nalisnick**, A. Matsukawa, Y.W. Teh, D. Gorur, and B. Lakshminarayanan. Do Deep Generative Models Know What They Don't Know? *Bayesian Deep Learning*, NeurIPS 2018.
16. **E. Nalisnick***, A. Matsukawa*, Y.W. Teh, D. Gorur, and B. Lakshminarayanan. Hybrid Models with Deep and Invertible Features. *Bayesian Deep Learning*, NeurIPS 2018.

17. O. Rybakov, V. Mohan, A. Misra, S. LeGrand, R. Joseph, K. Chung, S. Singh, Q. You, **E. Nalisnick**, L. Dirac, and R. Luo. The Effectiveness of a Two-Layer Neural Network for Recommendations. Workshop Track, ICLR 2018.
18. D. Ji, **E. Nalisnick**, and P. Smyth. Mondrian Processes for Flow Cytometry Analysis. *Machine Learning for Health*, NeurIPS 2017.
19. **E. Nalisnick** and P. Smyth. Variational Inference with Stein Mixtures. *Advances in Approximate Bayesian Inference*, NIPS 2017.
20. **E. Nalisnick** and P. Smyth. The Amortized Bootstrap. *Implicit Models*, ICML 2017.
21. **E. Nalisnick** and P. Smyth. Variational Reference Priors. Workshop Track, ICLR 2017.
22. **E. Nalisnick**, L. Hertel, and P. Smyth. Approximate Inference for Deep Latent Gaussian Mixtures. *Bayesian Deep Learning*, NeurIPS 2016.
23. **E. Nalisnick** and P. Smyth. Nonparametric Deep Generative Models with Stick-Breaking Priors. *Data-Efficient Machine Learning*, ICML 2016.
24. J. Park, M. Blume-Kohout, R. Krestel, **E. Nalisnick**, and P. Smyth. Analyzing NIH Funding Patterns over Time with Statistical Text Analysis. *Scholarly Big Data*, AAAI 2016.

THESES

1. **E. Nalisnick**. On Priors for Bayesian Neural Networks. *Doctoral Dissertation*, University of California, Irvine, 2018.
2. **E. Nalisnick**. Automatic Methods for Tracking Sentiment Dynamics in Plays. *Master's Thesis*, Lehigh University, 2013.
3. **E. Nalisnick**. A Combinatorial Explanation for a Conjecture of Fomin and Zelevinsky. *Honors Thesis*, Lehigh University, 2012.

Teaching

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|---|--------------|
| 1. Teaching Assistant University of California, Irvine
CS 175: Projects in Artificial Intelligence | 2018 |
| 2. Instructor University of California, Irvine
CS 299: Individual Study (Topics in Approximate Bayesian Inference) | 2017 |
| 3. Teaching Assistant University of California, Irvine
CS 274A: Probabilistic Learning | 2017 |
| 4. Instructor UCI Data Science Initiative
Advanced Predictive Modeling with Python | 2016 to 2017 |
| 5. Instructor UCI Data Science Initiative
Predictive Modeling with Python | 2015 to 2017 |

Awards

1. Top Reviewer NeurIPS 2017, ICML 2019
2. Travel Award ACL 2013, ICML Workshop on Implicit Models 2017, AISTats 2018, ICML 2019
3. NSF Graduate Research Fellowship — Honorable Mention 2014
4. UCI Graduate Dean's Recruitment Fellowship 2013
5. Phi Beta Kappa 2012

Professional Service

WORKSHOP ORGANIZATION

- Bayesian Deep Learning NeurIPS 2019

JOURNAL REVIEWING

- Machine Learning Research 2018, 2019
- Neural Processing Letters 2019
- Machine Learning 2017
- Data Mining and Knowledge Discovery 2017

CONFERENCE REVIEWING

- Neural Information Processing Systems (NeurIPS) 2016, 2017, 2018, 2019
- International Conference on Learning Representations (ICLR) 2018, 2019, 2020
- International Conference on Machine Learning (ICML) 2018, 2019
- Artificial Intelligence and Statistics (AISTats) 2019, 2020
- Uncertainty in Artificial Intelligence (UAI) 2019
- International Joint Conference on Artificial Intelligence (IJCAI) 2019
- Association for the Advancement of Artificial Intelligence (AAAI) 2020

WORKSHOP REVIEWING

- Symposium on Advances in Approximate Bayesian Inference 2018, 2019

Talks

1. Deep Learning: A Synthesis from Probabilistic Foundations, RAND CORP STATS. SEMINAR 2019
2. Evaluating Deep Generative Models on Out-of-Distribution Inputs, OXFORD STATS. SEMINAR 2019
3. Do Deep Generative Models Know What They Don't Know?, CAMAIML (MSR CAMBRIDGE) 2019
4. Machine Learning with Objective Priors, CAMBRIDGE DIVISION F CONFERENCE 2019

5. Do Deep Generative Models Know What They Don't Know?, CAMBRIDGE LTL SEMINAR 2019
6. Structured Shrinkage Priors for Neural Networks, IMPERIAL COLLEGE STATISTICS SEMINAR 2018
7. Deep Learning: A Synthesis from Probabilistic Foundations, UCI STATISTICS SEMINAR 2018
8. Approximate Inference for Frequentist Uncertainty Estimation, SOCAL ML SYMPOSIUM 2017
9. The Amortized Bootstrap, ICML WORKSHOP ON IMPLICIT MODELS 2017
10. Deep Generative Models with Stick-Breaking Priors, UCI AI/ML SEMINAR 2017
11. Alternative Priors for Deep Generative Models, OPENAI 2017
12. Nonparametric Deep Generative Models, ICML WORKSHOP ON DATA-EFFICIENT ML 2016

Engineering Employment

Software Engineering Intern Apparel Recommendations, Amazon.	Summer 2013
Software Engineering Intern Fulfillment Center Technologies, Amazon.	Summer 2012
Software Engineering Intern Website Rendering Platform, Amazon.	Summer 2011