Eric Nalisnick

Postdoctoral Research Associate
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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 — DeepMind
(one day per week) — February 2019 to Present

Research Scientist Intern — DeepMind
Supervisor: Balaji Lakshminarayanan — Summer 2018

Graduate Student Researcher — University of California, Irvine
Supervisor: Padhraic Smyth — Fall 2013 to Spring 2018

Applied Scientist Intern — Amazon
Supervisors: Vijai Mohan, Eiman Elnahrawy — Fall 2016

Research Intern — Twitter
Supervisor: Hugo Larochelle — Summer 2016

Research Intern — Microsoft
Supervisors: Rich Caruana, Nick Craswell — Summer 2015

Research Scientist Intern — Amazon
Supervisors: Vijai Mohan, Rahul Bhagat — Summer 2014

Publications

Pre-Prints / Working Papers

1. **E. Nalisnick**, A. Matsukawa, Y. W. Teh, and B. Lakshminarayanan. Detecting Out-of-Distribution Inputs to Deep Generative Models Using a Test for Typicality. *ArXiv Pre-Print*, 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** and J. M. Hernández-Lobato. Automatic Depth Determination for Bayesian ResNets. *Bayesian Deep Learning*, NeurIPS 2018.
14. **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.
15. **E. Nalisnick***, A. Matsukawa*, Y.W. Teh, D. Gorur, and B. Lakshminarayanan. Hybrid Models with Deep and Invertible Features. *Bayesian Deep Learning*, NeurIPS 2018.
16. 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.

17. D. Ji, **E. Nalisnick**, and P. Smyth. Mondrian Processes for Flow Cytometry Analysis. *Machine Learning for Health*, NeurIPS 2017.
18. **E. Nalisnick** and P. Smyth. Variational Inference with Stein Mixtures. *Advances in Approximate Bayesian Inference*, NIPS 2017.
19. **E. Nalisnick** and P. Smyth. The Amortized Bootstrap. *Implicit Models*, ICML 2017.
20. **E. Nalisnick** and P. Smyth. Variational Reference Priors. Workshop Track, ICLR 2017.
21. **E. Nalisnick**, L. Hertel, and P. Smyth. Approximate Inference for Deep Latent Gaussian Mixtures. *Bayesian Deep Learning*, NeurIPS 2016.
22. **E. Nalisnick** and P. Smyth. Nonparametric Deep Generative Models with Stick-Breaking Priors. *Data-Efficient Machine Learning*, ICML 2016.
23. 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

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

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

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 Summer 2013
Apparel Recommendations, Amazon.

Software Engineering Intern Summer 2012
Fulfillment Center Technologies, Amazon.

Software Engineering Intern Summer 2011
Website Rendering Platform, Amazon.