

Austin Tripp — Resume

 austintripp.ca •  austin-tripp •  AustinT
 austinjtripp •  Austin Tripp

Machine learning expert working in AI4Science.

Education

University of Cambridge

Cambridge, UK

PhD in Engineering

Oct 2019 – Present (exp. Mar 2024)

- Cambridge Machine Learning Group ([website](#))
- Supervised by José Miguel Hernández-Lobato ([website](#))

University of Waterloo

Waterloo, Ontario, Canada

BASc in Nanotechnology Engineering, Option in Mathematics

Sep 2014 – Jun 2019

- Graduated with Distinction, Dean's Honours List

Skills

Expertise: Bayesian optimization, Gaussian processes, graph kernels, ML for molecules

Machine learning: Probabilistic models, kernel methods, deep learning

Programming: python, bash, git, linux, \LaTeX . Some C++, SQL and Java.

Selected Work Experience

Microsoft Research

Cambridge, UK

Research Intern

Feb 2022 – June 2023

- Developing new machine learning algorithms for multi-step chemical synthesis planning
- Supervised by Marwin Segler

ContextLogic (Wish)

San Francisco, CA

AI Research Intern

May 2018 – Aug 2018

- Worked on recommender systems and embeddings of Wish's products using *word2vec* techniques

NVIDIA

Toronto, ON

Deep Learning Engineer

Jan 2018 – Apr 2018

- Applied phase-function neural networks to generate realistic video game character animation

Joanna Aizenberg Lab, Harvard University

Cambridge, MA

Research Assistant

Sep 2016 – Apr 2017

- Developed stimuli-responsive photonic crystals for vapour sensing
- Implemented kernel-based machine learning algorithms to predict liquid mixture compositions

- Designed and implemented pilot-scale production of titania photocatalyst for water treatment
- Co-author on paper examining the photocatalyzed degradation of organic compounds in water

Selected Publications

- [1] **Austin Tripp**, Sergio Bacallado, Sukriti Singh, and José Miguel Hernández-Lobato. “Tanimoto Random Features for Scalable Molecular Machine Learning”. In: *advances in neural information processing systems*. Vol. 36. curran associates, inc., 2023.
- [2] Guoqing Liu, Di Xue, Shufang Xie, Yingce Xia, **Austin Tripp**, Krzysztof Maziarz, Marwin Segler, Tao Qin, Zongzhang Zhang, and Tie-Yan Liu. “Retrosynthetic Planning with Dual Value Networks”. In: *Proceedings of the 40th International Conference on Machine Learning*. Ed. by Andreas Krause, Emma Brunskill, Kyunghyun Cho, Barbara Engelhardt, Sivan Sabato, and Jonathan Scarlett. Vol. 202. Proceedings of Machine Learning Research. PMLR, 2023, pp. 22266–22276.
- [3] Wenlin Chen, **Austin Tripp**, and José Miguel Hernández-Lobato. “Meta-learning Adaptive Deep Kernel Gaussian Processes for Molecular Property Prediction”. In: *The Eleventh International Conference on Learning Representations*. 2023.
- [4] Miguel García-Ortegón, Gregor NC Simm, **Austin J Tripp**, José Miguel Hernández-Lobato, Andreas Bender, and Sergio Bacallado. “DOCKSTRING: easy molecular docking yields better benchmarks for ligand design”. In: *Journal of chemical information and modeling* 62.15 (2022), pp. 3486–3502.
- [5] **Austin Tripp**, Erik Daxberger, and José Miguel Hernández-Lobato. “sample-efficient optimization in the latent space of deep generative models via weighted retraining”. In: *advances in neural information processing systems*. Ed. by h. larochelle, m. ranzato, r. hadsell, m. f. balcan, and h. lin. Vol. 33. curran associates, inc., 2020, pp. 11259–11272.

Refer to my Google Scholar page for a full list of publications.

Awards and Honours

- 2022:** Canadian Centennial Scholarship Fund Award *total value £5000*
2019: C.T. Taylor Cambridge International Scholarship *total value ~£132 000*
2017: Correlation-One Datathon: International Finalist
2017: University of Waterloo First in Class Engineering Scholarship

Languages

Native: English

Intermediate: French, Mandarin, Esperanto

B1-B2 level

Beginner: German, Japanese, Turkish, Korean, Spanish

A1-A2 level