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 – Jun 2024*
- Thesis title: *Probabilistic machine learning algorithms for molecule discovery*
- Supervisor: José Miguel Hernández-Lobato (website)
- Member of Cambridge Machine Learning Group (website)

University of Waterloo **Waterloo, CAN**
BASc in Nanotechnology Engineering, Option in Mathematics *Sep 2014 – Jun 2019*
- Honour's degree with cooperative (i.e. internship) program
- Graduated with Distinction, Dean's Honours List

Skills

Expertise: Machine learning, Bayesian optimization, AI for molecules, neural networks, Gaussian processes, kernel methods, deep learning

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

Selected Work Experience

Valence Labs (owned by Recursion) **London, UK**
Machine Learning Research Scientist *Sep 2024 – Present*
- Working on AI for drug discovery

Microsoft Research **Cambridge, UK**
Research Intern *Feb 2022 – June 2023*
- Developed new algorithms for multi-step synthesis planning and SYNTHESEUS python package
- Supervised by Marwin Segler

ContextLogic (Wish) **San Francisco, USA**
AI Research Intern *May 2018 – Aug 2018*
- Worked on recommender systems and embeddings of Wish's products using *word2vec* techniques

NVIDIA **Toronto, CAN**
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, USA**
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

Selected Publications

[1] **Austin Tripp**, Krzysztof Maziarz, Sarah Lewis, Marwin Segler, and José Miguel Hernández-Lobato. "Retro-fallback: retrosynthetic planning in an uncertain world". In: *The Twelfth International Conference on Learning Representations*. 2024.

[2] **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, pp. 33656–33686.

[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*. 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 — *A0-A2 level*