David Burt

Emmanuel College
Cambridge, CB2 3AP
United Kingdom

drb62@cam.ac.uk
https://davidrburt.github.io
Nationality: USA

Education	**Ph.D. in Engineering, University of Cambridge** **2018-Present** Machine Learning, Supervised by Professor Carl Edward Rasmussen.
	MPhil in Machine Learning, Speech and Language Technology, University of Cambridge **2017-2018** *Distinction.* Dissertation topic: Spectral Methods in Gaussian Process Approximations. Co-supervised by Dr. Mark van der Wilk and Prof. Carl Edward Rasmussen.
	Bachelor of Arts, Williams College (Mathematics) **2013-2017** *Summa cum laude* (GPA in top 2% of graduating class)
Journal Papers	**David R. Burt**, Carl Edward Rasmussen, and Mark van der Wilk. Convergence of sparse variational inference in Gaussian processes regression. *Journal of Machine Learning Research*, 2020. Extended version of *Rates of Convergence for Sparse Variational Gaussian Process Regression*
Conference Papers	Artem Artemev[*], **David R. Burt**[*], and Mark van der Wilk. Tighter bounds on the log marginal likelihood of Gaussian process regression using conjugate gradients. In *International Conference on Machine Learning (ICML)*, 2021
	Andrew Y. K. Foong[*], **David R. Burt**[*], Yingzhen Li, and Richard E. Turner. On the expressiveness of approximate inference in Bayesian neural networks. In *Neural Information Processing Systems (NeurIPS)*, 2020
	David Janz, **David R. Burt**, and Javier González. Bandit optimisation of functions in the Matérn kernel RKHS. In *Artificial Intelligence and Statistics, AISTATS*, 2020
	David R. Burt, Carl Edward Rasmussen, and Mark van der Wilk. Rates of convergence for sparse variational Gaussian process regression. In *International Conference on Machine Learning (ICML)*, 2019. **Best Paper Award**
Workshop Papers	**David R. Burt**, Sebastian W. Ober, Adrià Garriga-Alonso, and Mark van der Wilk. Understanding variational inference in function-space. In *Symposium on Advances in Approximate Bayesian Inference*, 2020
	Andrew Y. K. Foong[*], **David R. Burt**[*], Yingzhen Li, and Richard E. Turner. Pathologies of factorised Gaussian and MC dropout posteriors in Bayesian neural networks. In *Workshop on Bayesian Deep Learning, NeurIPS*, 2019
	David R. Burt, Carl Edward Rasmussen, and Mark van der Wilk. Explicit rates of convergence for sparse variational inference in Gaussian process regression. In *Advances in Approximate Bayesian Inference, NeurIPS*, 2018
Preprints	**David R. Burt**, Carl Edward Rasmussen, and Mark van der Wilk. Variational orthogonal features, 2020
Reviewing	AISTATS 2021
	I Can't Believe It's not Better. Workshop, NeurIPS 2020

Teaching	**Department of Engineering, University of Cambridge**
	Undergraduate Supervisor
	3F3: Statistical Signal Processing *Fall 2019*
	3F8: Inference *Winter 2020, Winter 2021*
	Held small groups (2-3 students) review sessions.

Department of Mathematics and Statistics, Williams College
Teaching Assistant
Math 341: Probability   *Spring 2015, Spring 2017*
Held supplementary problem solving sessions and graded homework.

Scholarships and Awards

Qualcomm Innovation Fellowship: Fellowship in the amount of $40000 awarded on the basis of a research proposal for the purpose of 'recognizing, rewarding, and mentoring innovative PhD students...' Selected in 2020.

Dr. Herchel Smith Fellowship: Fellowship awarded to graduating seniors at Williams college for graduate study at University of Cambridge. Selected in 2017.

Barry M. Goldwater Scholarship: Merit based, national (USA) scholarship in the amount of $7,500 awarded to undergraduates for promise in research in natural sciences, mathematics or engineering. Selected in 2016.

Rosenberg Prize for Excellence in Mathematics: Awarded to one or several seniors at Williams College for excellence in mathematics. Selected in 2017.

Computer Skills   Python, Tensorflow, Pytorch, LaTeX.