David Burt

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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

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

Artem Artemev*, **David R. Burt***, and Mark van der Wilk. Tighter bounds on the log marginal likelihood of Gaussian process regression using conjugate gradients, 2021

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

Deptartment 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.