

# James Ryan Requeima

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## EDUCATION

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### University of Cambridge

*Ph.D. in Engineering, Machine Learning Group*

Cambridge, UK

2016-2022

Advisors: Richard E. Turner and José Miguel Hernández-Lobato

Thesis: The Neural Processes Family: Translation Equivariance and Output Dependencies.

### University of Cambridge

*MPhil. in Machine Learning, Speech and Language Technology*

Cambridge, UK

2015-2016

Advisor: Zoubin Ghahramani

Thesis: Integrated Predictive Entropy Search for Bayesian Optimization.

Awarded with distinction.

### McGill University

*M.Sc. in Mathematics*

Montreal, CA

2006-2008

Advisor: Daniel Wise

Thesis: Relative sectional curvature in compact angled 2-complexes.

GPA: 3.9/4.0.

### University of Manitoba

*B.Sc. Honours in Mathematics*

Winnipeg, CA

2001-2006

GPA: 4.3/4.5.

## PROFESSIONAL EXPERIENCE

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### University of Toronto, Vector Institute

*Postdoctoral Fellow*

Toronto, CA

2023 - Present

Working with Prof. David Duvenaud on deep probabilistic models and characterizing LLM capabilities in probabilistic modelling and regression.

### Invenia Technical Computing

*Senior Researcher*

Cambridge, UK

2013 - 2023

Developed and implemented machine learning techniques for Invenia's automated electricity grid and wind farm forecasting systems as well as risk management strategies for trading systems. Cofounded Invenia's research office, Invenia Labs, in Cambridge UK.

### Montreal Institute for Learning Algorithms (MILA)

*Research Intern*

Montreal, CA

2019-2020

Supervisor: Yoshua Bengio

### University of Cambridge, Engineering Department

*Teaching Assistant*

Cambridge, UK

2018

Advanced Machine Learning course.

### Dawson College, Department of Mathematics

*College Professor*

Montreal, CA

2008 - 2019

Taught undergraduate level mathematics courses: Calculus, Linear Algebra, Probability and Statistics, Applied Mathematics for Civil Engineering, Business, Chemical Technology.

## Academic Service

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### Reviewer:

ICML: 2021, 2024. ICLR: 2017, 2021. NeurIPS: 2020, 2021, 2022, 2023, 2025.

### Elected Student Representative:

Mphil in Machine Learning, Speech and Language Technology program, Cambridge University, 2015.

## ACADEMIC AWARDS

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<b>Data Sciences Institute Postdoctoral Fellowship</b>	2024
<b>SALTISE</b> project grant to promote student-centered active learning in science.	2013
<b>NSERC</b> Postgraduate Scholarship.	2006–2008
<b>Institut des Sciences Mathématiques Award.</b>	2006–2007
<b>UofM Student Union Scholarship</b>	2004, 2005, 2006
<b>UofM General Scholarship</b>	2002, 2003

## PUBLICATIONS

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### **End-to-end data-driven weather forecasting.**

A. Vaughan, S. Markou, W. Tebbutt, J. Requeima, W. Bruinsma, M. Herzog, N. Lane, J. S. Hosking, R. E. Turner.  
*Nature (forthcoming)*, 2025.

### **A Meta-Learning Approach to Bayesian Causal Discovery.**

A. Dhir, M. Ashman, J. Requeima, M. van der Wilk  
*International Conference on Learning Representations*, 2025.

### **JoLT: Joint Probabilistic Predictions on Tabular Data Using LLMs.**

A. Shysheya, J. Bronskill, J. Requeima, S. A. Siddiqui, J. González, D. Duvenaud, R. Turner  
*In Submission*, 2025.

### **Context is Key: A Benchmark for Forecasting with Essential Textual Information.**

A. R. Williams, A. Ashok, É. Marcotte, V. Zantedeschi, J. Subramanian, R. Riachi, J. Requeima, A. Lacoste, I. Rish, N. Chapados, A. Drouin  
*In submission*, 2025.

### **AI for Operational Methane Emitter Monitoring from Space.**

A. Vaughan, G. Mateo-Garcia, I. Irakulis-Loitxate, M. Watine, P. Fernandez-Poblaciones, R. E. Turner, J. Requeima, J. Gorroño, C. Randles, M. Caltagirone, C. Cifarelli.  
*In submission*, 2025.

### **Canada's Food Price Report 2025**

Dalhousie University, University of Guelph & Vector Institute (J. Requeima), University of British Columbia, University of Saskatchewan  
*Report*, 2024.

### **Food for thought: How can machine learning help better predict and understand changes in food prices?**

K. L. Kupferschmidt, J. Requeima, M. Simpson, Z. Varsallay, E. Jackson, C. Kupferschmidt, S. El-Shawa, G. W. Taylor  
*Preprint*, 2024.

### **LLM Processes: Numerical Predictive Distributions Conditioned on Natural Language.**

J. Requeima\*, J. Bronskill\*, D. Choi, D. Duvenaud, R. E. Turner.  
*Neural Information Processing Systems*, 2024.  
*In-context Learning Workshop ICML (Best paper award)*, 2024.

### **Translation Equivariant Transformer Neural Processes.**

M. Ashman, C. Diaconu, J. Kim, L. Sivaraya, S. Markou, J. Requeima, W. Bruinsma, R. E. Turner.  
*International Conference on Machine Learning*, 2024.

### **Diffusion-Augmented Neural Processes.**

L. Bonito, J. Requeima, A. Shysheya, R. E. Turner.  
*NeurIPS Workshop on Diffusion Models*, 2023.

### **Sim2Real for Environmental Neural Processes.**

J. Scholz, T. R. Andersson, A. Vaughan, J. Requeima, R. E. Turner.  
*NeurIPS Workshop on Tackling Climate Change with Machine Learning*, 2023.

### **Autoregressive Conditional Neural Processes.**

W. Bruinsma\*, S. Markou\*, J. Requeima\*, A. Y. K. Foong\*, T. Andersson, A. Vaughan, A. Buonomo, S. Hosking, R. E. Turner.

*International Conference on Learning Representations*, 2023.

### **Environmental Sensor Placement with Convolutional Gaussian Neural Processes**

T. R. Andersson, W. Bruinsma, S. Markou, J. Requeima, A. Coca-Castro, A. Vaughan, A. Ellis, M. Lazzara, D. C. Jones, J. S. Hosking, R. E. Turner.

*Environmental Data Science (Climate Informatics Special Issue)*, 2023.

### **Challenges and Pitfalls of Bayesian Unlearning.**

A. Rawat, J. Requeima, W. Bruinsma, and R. E. Turner.

*ICML Updatable Machine Learning Workshop*, 2022.

### **Practical Conditional Neural Processes Via Tractable Dependent Predictions.**

S. Markou\*, J. Requeima\*, W. Bruinsma, A. Vaughan, and R. E. Turner.

*International Conference on Learning Representations*, 2022.

### **Efficient Gaussian Neural Processes for Regression.**

S. Markou\*, J. Requeima\*, W. Bruinsma, and R. E. Turner.

*ICML Uncertainty and Robustness in Deep Learning Workshop*, 2021.

### **The Gaussian Neural Process.**

W. Bruinsma, J. Requeima, A. Y. K. Foong, J. Gordon and R. E. Turner.

*Advances in Approximate Bayesian Inference Symposium*, 2020.

### **TaskNorm: Rethinking Batch Normalization for Meta-Learning.**

J. Bronskill\*, J. Gordon\*, J. Requeima, S. Nowozin, and R. E. Turner.

*International Conference on Learning Representations*, 2020.

### **Convolutional Conditional Neural Processes .**

J. Gordon\*, W. Bruinsma\*, A. Y. K. Foong, J. Requeima, Y. Dubois, and R. E. Turner.

*International Conference on Learning Representations*, 2020.

### **Fast and Flexible Multi-Task Classification Using Conditional Neural Adaptive Processes.**

J. Requeima\*, J. Gordon\*, J. Bronskill\*, S. Nowozin, and R. E. Turner.

*Neural Information Processing Systems*, 2019.

### **The Gaussian Process Autoregressive Regression Model (GPAR).**

J. Requeima\*, W. Tebbutt\*, W. Bruinsma\*, and R. E. Turner.

*International Conference on Artificial Intelligence and Statistics*, 2019.

### **Characterizing and Warping the Function Space of Bayesian Neural Networks.**

D. Flam-Shepherd, J. Requeima, and D. Duvenaud.

*NeurIPS Bayesian Deep Learning Workshop*, 2018.

### **Parallel and Distributed Thompson Sampling for Large-scale Accelerated Exploration of Chemical Space.**

J. M. Hernández-Lobato\*, J. Requeima\*, E. O. Pyzer-Knapp, and A. Aspuru-Guzik

*International Conference on Machine Learning*, 2017.

### **Mapping Gaussian Process Priors to Bayesian Neural Networks.**

D. Flam-Shepherd, J. Requeima, and D. Duvenaud.

*NeurIPS Bayesian Deep Learning Workshop*, 2017.

\* indicates equal contribution