James Ryan Requeima

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EDUCATION

University of Cambridge   **Cambridge, UK**
Ph.D. in Engineering, Machine Learning Group   *2016-2022*
Advisors: Richard E. Turner and José Miguel Hernández-Lobato
Thesis: The Neural Processes Family: Translation Equivariance and Output Dependencies.

University of Cambridge   **Cambridge, UK**
MPhil. in Machine Learning, Speech and Language Technology   *2015-2016*
Advisor: Zoubin Ghahramani
Thesis: Integrated Predictive Entropy Search for Bayesian Optimization.
Awarded with distinction.

McGill University   **Montreal, CA**
M.Sc. in Mathematics   *2006-2008*
Advisor: Daniel Wise
Thesis: Relative sectional curvature in compact angled 2-complexes.
GPA: 3.9/4.0.

University of Manitoba   **Winnipeg, CA**
B.Sc. Honours in Mathematics   *2001-2006*
GPA: 4.3/4.5.

PROFESSIONAL EXPERIENCE

University of Toronto, Vector Institute   **Toronto, CA**
Postdoctoral Fellow   *2023 - Present*
Working with Prof. David Duvenaud on deep probabilistic models and exploring LLM capabilities in probabilistic modelling and regression.

Invenia Technical Computing   **Cambridge, UK**
Senior Researcher   *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)   **Montreal, CA**
Research Intern   *2019-2020*
Supervisor: Yoshua Bengio

University of Cambridge, Engineering Department   **Cambridge, UK**
Teaching Assistant   *2018*
Advanced Machine Learning course.

Dawson College, Department of Mathematics   **Montreal, CA**
College Professor   *2008 - 2019*
Taught undergraduate level mathematics courses: Calculus, Linear Algebra, Probability and Statistics, Applied Mathematics for Civil Engineering, Business, Chemical Technology.

Community Service

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

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

PUBLICATIONS

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 (accepted), 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.
NIPS 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.

* indicates equal contribution