

Ryan Thompson

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Appointments

Research Fellow, School of Mathematical and Physical Sciences
University of Technology Sydney Jul 2024–pres.

Research Associate, School of Mathematics and Statistics
University of New South Wales Jun 2022–Jun 2024

Education

Doctor of Philosophy, Mathematics and Statistics
Monash University Feb 2019–Sep 2022

Bachelor of Commerce (Honours), Business Analytics
University of Sydney Mar 2016–Nov 2016

Bachelor of Commerce, Econometrics and Finance
University of Sydney Mar 2013–Nov 2015

Publications

Lyu, Z., Ahfock, D., Thompson, R., and McLachlan, G. J. (2024). ‘Semi-supervised Gaussian mixture modelling with a missing data mechanism in R’. *Australian and New Zealand Journal of Statistics* 66.2, pp. 142–162.

Thompson, R., Bonilla, E. V., and Kohn, R. (2024). ‘Contextual directed acyclic graphs’. *Proceedings of the 27th International Conference on Artificial Intelligence and Statistics*. Vol. 238, pp. 2872–2880.

Thompson, R., Forbes, C. S., MacEachern, S. N., and Peruggia, M. (2024). ‘Familial inference: Tests for hypotheses on a family of centres’. *Biometrika* 111.3, pp. 1029–1045.

Thompson, R., Qian, Y., and Vasnev, A. L. (2024). ‘Flexible global forecast combinations’. *Omega* 126, p. 103073.

Thompson, R. and Vahid, F. (2024). ‘Group selection and shrinkage: Structured sparsity for semiparametric additive models’. *Journal of Computational and Graphical Statistics* 33.4, pp. 1286–1297.

Thompson, R., Dezfouli, A., and Kohn, R. (2023). ‘The contextual lasso: Sparse linear models via deep neural networks’. *Advances in Neural Information Processing Systems*. Vol. 36, pp. 19940–19961.

Thompson, R. (2022). ‘Robust subset selection’. *Computational Statistics and Data Analysis* 169, p. 107415.

Matsypura, D., Thompson, R., and Vasnev, A. L. (2018). ‘Optimal selection of expert forecasts with integer programming’. *Omega* 78, pp. 165–175.

Preprints

- Thompson, R., Bonilla, E. V., and Kohn, R. (2025). ‘ProDAG: Projected variational inference for directed acyclic graphs’. arXiv: [2405.15167](#).
- Thompson, R., Wand, M. P., and Wang, J. J. J. (2025). ‘Scalable subset selection in linear mixed models’. arXiv: [2506.20425](#).

Presentations

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| ‘ProDAG: Projection-induced variational inference for directed acyclic graphs’.
Seminar talk, Department of Statistics, Ohio State University | Mar 2025 |
| ‘ProDAG: Projection-induced variational inference for directed acyclic graphs’.
Invited talk, 2025 Workshop in Honour of Professors Heather Anderson and Farshid Vahid | Mar 2025 |
| ‘Familial inference for regression models’. Invited talk, 2024 International Society for Bayesian Analysis World Meeting | Jul 2024 |
| ‘Contextual directed acyclic graphs’. Contributed poster, 27th International Conference on Artificial Intelligence and Statistics | May 2024 |
| ‘The contextual lasso: Sparse linear models via deep neural networks’. Contributed poster, 37th Conference on Neural Information Processing Systems | Dec 2023 |
| ‘Contextual directed acyclic graphs’. Seminar talk, School of Mathematics and Statistics, University of New South Wales | Nov 2023 |
| ‘Global combinations of expert forecasts’. Invited talk, 6th International Conference on Econometrics and Statistics | Aug 2023 |
| ‘Reimagining time-honoured statistical models via deep learning’. Invited talk, CSIRO’s Machine Learning and Artificial Intelligence Reimagining Science Conference 2023 | Jun 2023 |
| ‘Sparse statistical learning with structure: Advances in computation and theory’. Invited talk, 36th PhD Conference in Economics and Business | Nov 2022 |
| ‘Beyond the black box: Expressive and interpretable modelling’. Invited talk, CSIRO’s Collaborative Intelligence Meet and Mingle 2022 | Oct 2022 |
| ‘Familial inference’. Contributed talk, 24th International Conference on Computational Statistics | Aug 2022 |
| ‘Robust subset selection’. Invited talk, 15th International Conference on Computational and Financial Econometrics | Dec 2021 |
| ‘Group selection and shrinkage with application to sparse semiparametric modeling’. Contributed talk, Joint Statistical Meetings 2021 | Aug 2021 |
| ‘Robust subset selection’. Contributed talk, Australian and New Zealand Statistical Conference 2021 | Jul 2021 |

Teaching

Monash University:

Applied Forecasting, Teaching Assistant	Sem 1 2020, Sem 1 2021, Sem 2 2022
Principles of Econometrics, Teaching Assistant	Sem 2 2021
Statistical Thinking, Teaching Assistant	Sem 2 2019, Sem 2 2020
Business Forecasting, Teaching Assistant	Sem 1 2019

University of Sydney:

Quantitative Business Analysis, Teaching Assistant	Sem 1 2016, Sem 2 2016
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Non-academic positions

Visiting Scientist, Analytics and Decision Sciences, CSIRO's Data61	Jun 2022–pres.
Senior Consultant, Actuarial and Financial Risk, KPMG Australia	Oct 2018–Feb 2019
Consultant, Actuarial and Financial Risk, KPMG Australia	Feb 2017–Sep 2018

Honours

Monash University Vice-Chancellor's Commendation for Thesis Excellence	2023
Monash Business School Purple Unit (Teaching) Award	2020, 2021, 2022
Monash Business School Student Excellence Award	2019
Australian Government Research Training Program Scholarship	2019
Monash Business School Dean's Excellence Award	2019
University of Sydney Academic Merit Prize	2016

Service

Reviewer for Advances in Neural Information Processing Systems, Econometric Reviews, Electronic Journal of Statistics, International Conference on Artificial Intelligence and Statistics, International Conference on Learning Representations, Omega	
Thesis examiner for University of Sydney	
Organiser for UNSW Data Science Hub Year 10 Work Experience Week 2022, 2023	