

Anant Mathur
PhD Candidate at the School of Mathematics and Statistics
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A. Education

UNSW Sydney , Sydney, Australia <i>PhD</i> in Statistics Focus Area: Computational Statistics and Operations Research Dissertation title: Efficient Algorithms for Statistical Learning Supervisors: Dr Zdravko Botev, Dr Sarat Moka	09/20 - present
UNSW Sydney , Sydney, Australia <i>Bachelor of Science (Honours)</i> , Statistics, 2019	01/15 - 12/19

B. Research areas

- ▷ **Computational & high-dimensional statistics**
Sparse statistical learning
Methodological areas: Model compression and feature selection, Optimization for machine learning, Numerical analysis, Simulation
Specific topics: Penalized regression, Linear mixed-models, Neural network pruning, Matrix computations
Applications in genomics, quantitative risk management, and deep learning

C. Awards and Honours

Outstanding Statistics Talk, UNSW School of Mathematics and Statistics, Postgraduate Conference (2023)
for the talk “*New Methods for Grouped Variable Selection*”.

UNSW Nominee for [JB Douglas Award](#) (2023)

D. Academic Service

- ▷ **Service as reviewer for journals**
Pattern recognition
- ▷ **Service as organizer/chair of technical sessions in conferences**
INFORMS International Meeting, Singapore, forthcoming

E. Research publications & preprints

▷ **Manuscripts under peer-review**

A. Mathur, S. Moka, Z. Botev “A Fast MM Algorithm for Group Lasso”.

▷ **In peer-reviewed journals**

A. Mathur, S. Moka, Z. Botev, (2022). “Coordinate Descent for Variance-Component Models” *Algorithms*, 2022, 15 (10): 354.

▷ **Papers in peer-reviewed conference proceedings**

A. Mathur, S. Moka, B. Lique, Z. Botev, “Group COMBSS: Group Selection via Continuous Optimisation”, 2024 Winter Simulation Conference (WSC), In Proceedings of the 2024 *Winter Simulation Conference*, IEEE press, 2024, pp. 3217-3228

A. Mathur, S. Moka, B. Lique, Z. Botev, “Feature Selection in Generalised Linear Models via the Lasso: To Scale or Not to Scale?”, *15th OPT-ML Workshop, NeurIPS 2023*.

A. Mathur, S. Moka, B. Lique, Z. Botev, “Column Subset Selection and Nyström Approximation via Continuous Optimisation”, 2023 Winter Simulation Conference (WSC), In Proceedings of the 2023 *Winter Simulation Conference*, IEEE press, 2023. pp. 3601-3612.

A. Mathur, S. Moka, B. Lique, Z. Botev, “Variance Reduction for Matrix Computations with Applications to Gaussian Processes”, *VALUETOOLS 2021*, LNCS 13116, pp. 275-290.

F. Research talks

▷ **Invited talks in Specialized Workshops/Conferences**

SSA NSW Branch 2024 Annual Event

▷ **Seminar Presentations**

Macquarie University, School of Mathematical and Physical Sciences, 09/24

UNSW Sydney, School of Mathematical and Statistics, Statistics Seminar, 09/24

▷ **Contributed talks in major conferences**

INFORMS International Meeting, Singapore, *forthcoming*

2023 Winter Simulation Conference, San Antonio, 12/23

25th International Congress on Modelling and Simulation (MODSIM 2023), Darwin, 07/23

Australian Mathematical Society Annual Meeting 2022, Sydney, 12/22

VALUETOOLS 2021 (Online), 10/2

G. Teaching

▷ **UNSW Sydney**

Machine Learning and Data Mining Lecture Assistant, Instructor	2019 - 2024
Numerical Methods and Statistics Instructor	2025

H. Student mentoring

▷ **Honours students for whom significant thesis research guidance provided**

Ruiqi Dao, 01/25 – present (Primary advisor: Sarat Moka)
Seungjoo Lee, 01/24 – 10/24 (Primary advisor: Sarat Moka)

I. Industry work experience

Migrant Justice Institute, Sydney, Data Analyst, 03/25 - present
National Drug and Alcohol Research Centre, Sydney, Research Assistant, 07/18 -07/20
SimpleKYC, Sydney, Intern, Data Science 12/17-03/18
HeyYou, Sydney, Intern, Data Science 12/17-03