

Anant Mathur
PhD Candidate at the School of Mathematics and Statistics
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School of Mathematics
and Statistics, UNSW
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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

Programming languages: Julia, Python, MATLAB, R

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