Manikya Alister

PhD Candidate · Computational Cognitive Science

University of Melbourne, 700 Swanston Street, Carlton, VIC 3056

✉ alisterm@student.unimelb.edu.au | ⌂ manikyaalister.github.io/ | 🐦 @ManikyaAlister

Education

University of Melbourne   *Melbourne, Australia*
PhD Computational Cognitive Science   *2022 - 2025 (expected)*
- Advisor: Prof. Andrew Perfors

University of California, Irvine   *Irvine, California*
Summer School for the Computational Modelling of Language   *August 2022*

University of Queensland   *Brisbane, Australia*
Bachelor of Psychological Science (Honours Class 1)   *2017 - 2020*
- Advisor: Dr. Timothy Ballard
- Graduated rank #1 in my cohort.
- Best honours thesis in cohort.

Publications

Published (Peer Reviewed)

1. **Alister, M.**, Herbert, S., Sewell, DK., Neal, A. Ballard, TJ. (2024). The Impact of Cognitive Resource Constraints on Goal Prioritization. *Cognitive Psychology.*.

2. **Alister, M.**, Ransom, K. J., & Perfors, A. (2023). Inferring the truth from deception: What can people learn from helpful and unhelpful information providers? *Proceedings of the Annual Meeting of the Cognitive Science Society*, 45(45). Link.

3. **Alister, M.**, McKay, KT., Sewell, DK., Evans, NJ., (2023). Uncovering the Cognitive Mechanisms Underlying the Gaze Cueing Effect. *Quarterly Journal of Experimental Psychology.* Link.

4. McKay, K. T., Grainger, S. A., **Alister, M.**, & Henry, J. D. (2023). Enhancing ecological validity of gaze-cueing stimuli is associated with increased gaze following for older but not younger adults. Psychology and Aging, 38(6), 562–572. Link.

5. Grainger, S. A., Henry, J. D., **Alister, M.**, Bourdaniotis, X. E., Mead, J., Bailey, T. G., Coombes, J. S., & Vear, N. (2023). Cardiorespiratory fitness and muscular strength do not predict social cognitive capacity in older age. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*. Link.

6. **Alister, M.**, Ransom, KJ., Perfors, A. (2022). Source independence affects argument persuasiveness when the relevance is clear. *Proceedings of the Annual Meeting of the Cognitive Science Society 44 (44)*. Link.

7. McKay, KT., Talipski, LA., Grainger, SA, **Alister, M.**, Henry, JD. (2022). How Does Ageing Affect Social Attention? A Test of Competing Theories using Multi-Level Meta-Analysis. *The Journals of Gerontology: Series B*. Link

8. **Alister, M.**, Vickers-Jones, R., Sewell, DK., Ballard, TJ., (2021). How do we Choose Our Giants? Perceptions of Replicability in Psychological Science. *Advancements in Methods and Practices in Psychological Science.* Link.

Under Review

1. **Alister, M.**, Ransom, K.J., Connor-Desai, S., Soh, E.V. Hayes, B., Perfors, A. How convincing is a crowd? Quantifying the persuasiveness of a consensus across individuals and claim types.

2. **Alister, M.**, Evans, Nathan J. ParAcT-DDM: A diffusion-based framework for modelling systematic, time-varying cognitive processes.

Non-academic publications and articles featuring my research

1. **Alister, M.**, How does an organisation of data professionals leverage its own data, *Good Data Institute.* Link.

2. Wilcox, C. The life academic: Getting your priorities straight, with a little help from science, *Science Advisor*. Link.

Awards, Fellowships, & Grants ($217, 605 AUD Total)

2023	**Cognitive Science Society Travel Award**, Cognitive Science Society	*$1,780*
2022	**UC Irvine Travel Scholarship**, University of California, Irvine	*$750*
2022-2025	**Research Training Program Scholarship**, University of Melbourne/Australian Government	*$208,075*
2018 & 2019	**UQ Summer Research Scholarship**, University of Queensland	*$7,000*
2020	**University Medal**, University of Queensland (Top ~2% of university graduates)	
2020	**Australian Psychological Society Prize**, Australian Psychological Society (Rank #1 in cohort)	
2020	**McElwain Prize**, University of Queensland (Best Honours thesis in Psychology)	*$500*

Research Experience

University of Melbourne   *Melbourne, Australia*
Doctoral Candidate, University of Melbourne   *Jan 2021 - 2025 (expected)*
- Led all aspects of several research studies involving collecting data from over 2,000 participants, implementing web-based experiments and surveys, and coordinating research teams made up of interstate and international personnel.
- Developed and applied computational models of learning, reasoning, and decision making.
- Applied Bayesian and Frequentist quantitative analysis techniques to generate insights from multiple diverse data sets.
- Communicated insights to different audiences in 5+ empirical research papers and 8+ presentations at domestic and international scientific conferences.

University of Adelaide/Defence Science   *Adelaide, Australia*
Research Associate, University of Adelaide/Defence Science   *May - September 2023*
- Built a web-based software prototype leveraging state-of-the-art large language models and natural language processing tools to track and analyze how narratives emerge on social media and influence the information environment.

University of Queensland   *Brisbane, Australia*
Research Assistant, University of Queensland   *Jan 2021 - Dec 2021*
- Simulated computational models of decision-making, fitted them to experimental data, and estimated their parameters using Bayesian hierarchical and individual-level techniques.
- Wrote up findings for publications.

University of Queensland   *Brisbane, Australia*
Summer Research Scholar, University of Queensland   *Summer 2018/19 & 2019/20*
- Received a scholarship to work on two different research projects over the summer.
- Reviewed literature, created surveys using Qualtrics, cleaned and analyzed data using R, extracted metadata of 10,000+ journal articles from the Web of Science, and wrote up findings for publication.

Professional Experience

Freelance Data Scientist
Example projects: *August 2022 - Present*
- Good Data Institute:
    - Automated their on-boarding processes for new members.
    - Designed and deployed a web-based dashboard using R Shiny and Github Actions for visualizing various aspects of the organization including diversity, equity, and project impact.
    - See this blog post I wrote outlining full project.
- Queensland Mind Project:
    - Consulted on data analysis and implemented reproducible Bayesian and Frequentest statistical models using R.

Institute for Continuing and TESOL Education   *Brisbane, Australia*
Assistant   *March 2017 - April 2021*
- Provided scheduling, organizing, setup, and tech support for various events including meetings, classes, welcome events, tours, and activities for visiting students.
- Assisted in delivering English language courses and international development training for overseas students and government departments.

Presentations

* presenting author; + mentored undergraduate

INVITED TALKS

Causal Cognition Laboratory, **University College London**. *How do people use social consensus to infer ground truth?* July 2024.

Computational Modelling in Psychology Group, **Ludwig Maximilian University**, Munich, Germany. *How does social inference facilitate efficient cognition?* July 2024.

CoCoSci Special Feature Talk, **Massachusetts Institute of Technology (MIT)**, Cambridge MA. *How does social inference facilitate efficient cognition?* March 2024.

Cognition Colloquium, **University of California, Berkeley** (Remote). *What can we learn from helpful and unhelpful information providers?* February 2024.

Sydney Thinking and Reasoning Laboratory, **University of New South Wales**, Sydney. *What is the role of social inference in cognition?*. August 2023.

INTERNATIONAL CONFERENCES

Alister, M.*, Evans, N. (2023, July) *A model to describe how cognitive processes change across time*. Annual Meeting of the Cognitive Science Society, Sydney, Australia. Poster.

Alister, M.*, Ransom, K. J., Perfors, A. (2023, July) *Inferring the truth from deception: What can people infer from helpful and unhelpful information providers?* Annual Meeting of the Cognitive Science Society, Sydney, Australia. Talk.

Alister, M.*, Ransom, K. J., Perfors, A. (2022, July) *Source Dependence Influence Argument Persuasiveness When Relevance is Clear*. Annual Meeting of the Cognitive Science Society, Toronto, Canada. Poster.

Alister, M.*, Ransom, K. J., Perfors, A. (2022, July) *Source Dependence Influence Argument Persuasiveness When Relevance is Clear*. Mathematical Psychology Society Conference/International Conference in Computational Modelling, Toronto, Canada. Talk.

Alister, M., Vickers-Jones, R., Sewell, D. K., Ballard, T.* (2020, November), *How do we choose our giants? Perceptions of replicability in psychological science*, 61st Meeting of the Psychonomic Society (Remote). Talk.

DOMESTIC CONFERENCES

Alister, M.*, Evans, N. (2023, September) *A diffusion based framework for modelling time-varying changes in cognitive processes*. Australasian Mathematical Psychology Conference, Perth.

Alister, M.*, Ransom, K. J. (2023, September) *Rhetorical Mapping and Narrative Detection Online*. DSTG Mis/Disinformation Conference, Melbourne.

Alister, M.*, Ransom, K. J., Perfors, A. (2023, February) *Inferring the truth from deception: What can people infer from helpful and unhelpful information providers?*. Australasian Mathematical Psychology Conference, Melbourne.

Alister, M.*, McKay, K. T., Sewell, D. K., Evans, N. J. (2022, February), *A computational modelling investigation of the mechanisms subserving the gaze-cueing effect*, Australasian Mathematical Psychology Conference (Remote).

Alister, M.*, Vickers-Jones, R., Sewell, D. K., Ballard, T. (2021, February), *Perceptions of replicability in psychological science*, Australasian Mathematical Psychology Conference (Remote). (recording)

Alister, S.*, Herbert, S., Ballard, T. (2021, February), *Pursuing Multiple Goals under Time Pressure: A Computational Investigation*, Australasian Mathematical Psychology Conference (Remote). (recording)

Alister, M.*, Vickers-Jones, R., Sewell, D. K., Ballard, T. (2020, November), *Perceptions of replicability in psychological science*, UQ Centre for Perception & Cognitive Neuroscience Mini-Conference, Brisbane

WORKSHOPS AND TUTORIALS

How to code an MCMC sampler from scratch. Weekly Bayesian Analysis Workshop for Graduate Students, University of Melbourne School of Psychological Sciences

Skills

Data Analysis Specializing in Bayesian statistical & computational modelling, machine learning, and natural language processing.

Programming R, Python, JavaScript, CSS, HTML, R Shiny, Stan, Bash

Software and Data Engineering Experience implementing web-based applications and online data systems.

Spoken Languages English (native), Spanish (conversational)

Research Design With experience designing and implementing novel experiments, replications, and surveys across multiple platforms and software.

Other Programs/Software Github, Google App Engine, Firestore, Cloud Computing, LaTeX, SPSS, Jamovi, Qualtrics, Microsoft Office

Teaching Experience

Academic Tutor = Teaching Assistant in Australia

University of Melbourne *Melbourne, Australia*

ACADEMIC TUTOR
- **Sem 1, 2024:** Research Methods for Human Inquiry (R and Statistics)
- **Sem 1, 2023:** Research Methods for Human Inquiry (R and Statistics)
- **Sem 1, 2022:** Research Methods for Human Inquiry (R and Statistics)

University of Queensland *Brisbane, Australia*

LEAD ACADEMIC TUTOR
- **Sem 2, 2021:** Introduction to Social, Developmental, and Clinical Psychology

University of Queensland *Brisbane, Australia*

ACADEMIC TUTOR
- **Sem 2, 2021:** Judgement and Decision Making
- **Sem 1, 2021:** Introduction to Social, Developmental, and Clinical Psychology

Supervision

* sole/primary supervisor; [+] *secondary supervisor*

2023-2024	***Ee Von Soh**, Summer Research Intern, University of Melbourne
2024	[+]**Spike Huang**, Honours Student, University of Melbourne
2024	[+]**Meila Wong**, Honours Student, University of Melbourne

Service & Professional Memberships

OUTREACH

Good Data Institute, Volunteer *2022 - Present*
Australasian Mathematical Psychology Conference Planning Committee, Committee Member *2021*

PEER REVIEW

Collabra Psychology
Computational Brain and Behaviour
Cognitive Science Society

PROFESSIONAL MEMBERSHIPS

Cognitive Science Society
Australasian Mathematical Psychology Society
International Mathematical Psychology Society