Linh H. Nghiem

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ACADEMIC EXPERIENCE

University of Sydney   NSW, Australia
Lecturer in Statistics   2022–

Australian National University   ACT, Australia
Postdoctoral Research Fellow   2019–2022

EDUCATION

Southern Methodist University   Texas, USA
Ph.D. in Statistical Science   2015–2019

University of Miami   Florida, USA
Bachelor of Science in Finance and Mathematics, *summa cum laude*   2011–2015

RESEARCH INTERESTS

Measurement error, dimension reduction, privacy, graphical model, longitudinal data

PUBLICATIONS

Refereed journal articles

1. **Nghiem, L.**, & Hui, F.K.C. (2023+). Random effect model-based sufficient dimension reduction for independent clustered data, to appear in *Journal of American Statistical Association*.

2. **Nghiem, L.**, Hui, F.K.C., Müller, S., Welsh, A.H. (2024). Likelihood-based surrogate dimension reduction. *Statistics and Computing* 34, 51 (2024).

3. **Nghiem, L.**, & Potgieter, C. (2023+). A linear errors-in-variables model with unknown heteroscedastic measurement errors, *Statistica Sinica*. Advanced online publication.

4. Tabak, B. A., Wallmark, Z., **Nghiem, L.**, Alvi, T., Sunahara, C. S., Lee, J., & Cao, J. (2023). Initial evidence for a relation between behaviorally assessed empathic accuracy and affect sharing for people and music. *Emotion*, 23(2) 437-449.

5. **Nghiem, L.**, Hui, F.K.C, Müller, S., Welsh, A.H. (2023). Screening methods for linear errors-in-variables regression models in high dimensions. *Biometrics*, 79, 926–939.

6. **Nghiem, L.**, Hui, F.K.C., Müller, S., Welsh, A.H. (2022). Estimation of graphical models for skew continuous data. *Scandinavian Journal of Statistics*, 49, 1811–1841.

7. Hui, F.K.C., **Nghiem, L.** (2022). Sufficient dimension reduction for clustered data via finite mixture modeling. *Australian and New Zealand Journal of Statistics*, 64, 133-157.

8. **Nghiem, L.**, Hui, F.K.C., Müller, S., Welsh, A.H. (2022). Sparse sliced inverse regression via Cholesky matrix penalization, *Statistica Sinica* 32, 2431-2453.

9. Wallmark, Z, **Nghiem, L.**, & Marks, L.E. (2021). Do 'bright' sounds modulate visual brightness discrimination? Exploring cross-modal interference involving timbre. *Music Perception: An Interdisciplinary Journal*, 39, 1–20.

10. Byrd, M., **Nghiem, L.**, & Mcgee, M. (2021). Bayesian regularization of Gaussian graphical models with measurement error. *Computational Statistics and Data Analysis* 156, 107085.

11. **Nghiem, L.**, Potgieter, C., & Byrd, M. (2020). Estimation in linear errors-in-variables with unknown error distribution. *Biometrika* 107, 841-856.

12. **Nghiem, L.**, & Potgieter, C. (2019). Simulation-Selection-Extrapolation: Estimation in high dimensional errors-in-variables models. *Biometrics* 75, 1133–1144.

13. Wallmark, Z., Frank, R., & **Nghiem, L.** (2019). Creating novel timbres from Adjectives: An exploratory study using FM Synthesis. *Psychomusicology: Music, Mind, and Brain* 29, 188–199.

14. **Nghiem, L.**, & Potgieter, C. (2018). Density estimation in the presence of heteroscedastic measurement error of unknown type using phase function deconvolution. *Statistics in Medicine* 37, 3679–3692.

Pre-prints and submitted manuscripts

15. Woollard, M., Panwar, P., Harland, L., Gottgens, B., Ghazanfar, S., **Nghiem, L.**. Weighted sliced inverse regression for scalable supervised dimensionality reduction of spatial transcriptomics data.

16. **Nghiem, L.**, Hui, F.K.C., Müller, S., Welsh, A.H. (2024). High–dimensional sliced inverse regression with endogeneity.

17. **Nghiem, L.**, Cao, J. & Moon, C. (2024) Enhancing empathic accuracy: A penalized functional alignment method to correct misalignment in emotional perception, in revision for *Psychometrika*.

18. **Nghiem, L.**, A. Ding & S. Wu (2024). Logistics regression model for differentially private matrix masked data.

19. **Nghiem, L.**, A. Ding & S. Wu. Statistical analyses for differentially private matrix masking data.

20. Li, W., **Nghiem, L.**, Hui, F.K.C, & Welsh, A.H. (2024). Sufficient dimension reduction in the presence of non-ignorable missing covariates.

Book Chapter

21. **Nghiem, L.**, Tabak, B., Wallmark, Z., Alvi, T. & Cao, J. (2022). A Bayesian latent variable model for analysis of empathic accuracy. *Recent Advances on Sampling Methods and Educational Statistics. Emerging Topics in Statistics and Biostatistics.*

Technical reports

22. Byrd, M., **Nghiem, L.**, & Cao, J. (2017). Lagged exact Bayesian online changepoint detection, arXiv:1710.03276

SOFTWARE

1. **Nghiem, L.**(2024). `RMIR`: Random-effects model-based inverse regression model. https://github.com/lnghiemum/RMIR-paper.

2. Woollard, M., Ghazanfar, S., **Nghiem, L.**(2024) `wSIR`: Weighted sliced inverse regression for supervised dimension reduction of spatial transcriptomics and single cell gene expression data. https://github.com/SydneyBioX/wSIR.

Invited Talks

1. Workshop on Mathematics of Data Science, University of Sydney, December 2024.

2. School of Mathematics and Statistics, University of Melbourne, October 2024.

3. Institute of Mathematical Statistics Asia Pacific-Rim Meeting, Melbourne, January 2024.

4. Joint Statistical Meeting, Toronto, Ontario, August 2023.

5. International Chinese Statistical Association's Meeting, July 2023.

6. Statistical Society of Australia's Canberra Branch, May 2023.

7. School of Mathematics and Statistics, University of New South Wales, April 2023.

8. Department of Clinical & Translational Research, University of Texas Southwestern Medical Center, March 2023.

9. Department of Statistics and Data Science, Southern Methodist University, October 2022.

10. Department of Biostatistics, University of Florida, September 2021.

11. Melbourne Business School, September 2021.

12. Department of Mathematics and Statistics, Macquarie University, August 2021.

13. School of Mathematics and Statistics, University of Sydney, August 2021.

14. Department of Business and Econometrics, Monash University, June 2021.

15. School of Mathematics and Statistics, Statistics, University of New South Wales. June 2020.

16. Statistical Methods in Data Science, MATRIX workshop. December 2019.

17. Research School of Finance, Actuarial Studies and Statistics, Australian National University. October 2019.

18. Regional Meeting of the International Environmetrics Society, Kunming, China. August 2019.

19. School of Mathematics and Statistics, University of Sydney. April 2019.

20. National Institute for Applied Statistics Research Australia Meeting. April 2019.

21. Department of Statistical Science Seminar, Southern Methodist University, October 2018.

Contributed presentations

1. Australia Statistical Meeting, Wollongong, NSW Australia. December 2023.

2. International Biometric Society Australian Region Conference, Adelaide, South Australia, Australia. December 2019.

3. Joint Statistical Meeting. Vancouver, British Columbia, Canada. August 2018.

4. Joint Statistical Meeting. Baltimore, Maryland, USA. August 2017.

5. WNAR Student Paper Competition. Santa Fe, New Mexico, USA. June 2017.

Grants and funding

- Travel grant, Faculty of Science Overseas Conference and Research Visit Support Program 2023 ($5,000)
- Faculty of Science/Faculty Startup Scheme ($20,000)
- "An fMRI investigation of empathic accuracy for people and music." GRAMMY *Museum Grant Program.* Co-investigator with Wallmark, Z., Tabak, B., Cao, J. and Kahn, L. ($US20,000) .

Teaching

1. **Lecturer and Unit Coordinator**

   - MATH1962 Mathematics 1B (Statistics). Semester 2, 2024.
   - MATH1905 Statistical Thinking with Data (Advanced), University of Sydney. Semester 2, 2023.
   - STAT3022/3922/4022 Linear Models, University of Sydney. Semester 1, 2022–2024.
   - STAT3023 Statistical Inference, University of Sydney. Semester 2, 2022.
   - STAT7055 Introductory Statistics for Business and Finance, Australian National University, Spring 2021 (intensive course).
   - STAT6038 Regression Modeling, Australian National University, Autumn 2020, 2021 (intensive course).

2. **Teaching Assistant**

   - STAT2331 Introduction to Statistical Methods, Southern Methodist University. Fall 2016, Spring 2017.
   - STAT2301 Business Statistics, Southern Methodist University. Fall 2015, Spring 2016.

Supervision

1.	Dongyuan Lin Master of Mathematical Sciences, co-supervisor	2024–2025
2.	Max Woollard PhD in Statistics, co-supervisor	2024–
3.	Nia Chen PhD in Statistics, associate supervisor	2023–
4.	Wei Li PhD in Statistics, associate supervisor (at Australian National University)	2020–2025
5.	Tianyi Wang Master of Mathematical Sciences, supervisor	2023–2024
6.	Zuocheng Dai Honours in Data Science, supervisor	2023–2024
7.	Max Woollard Honours in Data Science, co-supervisor	2023
8.	Xiaoyue Wen Master of Mathematical Sciences, supervisor	2022–2023
9.	Lucinda Davies Honours in Data Science, co-supervisor	2022

Professional Activities

- Membership: American Statistical Association, Statistical Society of Australia (SSA)
- Referees: National Science Foundation, Biostatistics, Biometrics, Journal of American Statistical Association, Journal of Computational and Graphical Statistics, Brazilian Journal of Probability and Statistics, Computational Statistics, Journal of Nonparametric Statistics
- Services: Statistics seminar organizer (2022–2024), Program Chair of the Australian Early Career and Student Statistician Conference 2021, Council member of SSA Canberra branch (2021) and NSW branch (2022-present)

Awards

- University of Sydney Faculty of Science Early Career Teacher of the Year   2024
- SSA President's Award for Leadership in Statistics   2022
- SMU Department of Statistical Science Walsh Award for the Best Paper in the Qualifying Examination   2018
- The Western North American Region of the International Biometrics Society Distinguished Oral Paper Award   2017
- SMU Department of Statistical Science Milton Award for the Best Performance in first year courses   2016