

## Appointment

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2024 – present    **University of Texas at Austin**  
Postdoctoral Fellow working with Prof. Roger Peng

## Education

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2020 – 2023    **PhD in Statistics, Monash University**  
Thesis: *New tools for visualising and explaining multivariate spatio-temporal data*, supervised by Prof. Dianne Cook, Dr. Patricia Menéndez, Dr. Nicolas Langrené, and Dr. Ursula Laa

2016 – 2019    **BComm(Hons.), Monash University**  
Bachelor of Commerce with Honours, First Class Honours (H1)  
Thesis: *Exploration of judicial facial expression in videos of legal proceedings*, supervised by Prof. Dianne Cook and Prof. Russell Smyth

## Awards

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2024    John M. Chambers Statistical Software Award (ASA section of statistical computing), awarded for the R package cubble, which introduces a new data structure for spatio-temporal data and provides a ggplot2 extension for creating glyph maps.

2023    Opportunity scholar, Posit::conf(2023)

2022    People's Choice Award, ECSS Miniconference, Statistical Society of Australia

2020 - 2023    Postgraduate (PhD) Research Scholarship, CSIRO Data61

2020 - 2023    Co-Funded Graduate Research Scholarship, Monash Business School

2020    Dean's Honours List, Monash Business School

2019    Summer Vacation Research Scholarship, Monash University

## Publications

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1. **Zhang, H. S.**, Cook, D., Laa, U., Langrené, N., & Menéndez, P. (2024). cubble: An R package for organizing and wrangling multivariate spatio-temporal data. *Journal of Statistical Software*, 110, 1-27. <https://doi.org/10.18637/jss.v110.i07>
2. **Zhang, H. S.**, Cook, D., Laa, U., Langrené, N., & Menéndez, P. (2024). A Tidy Framework and Infrastructure to Systematically Assemble Spatio-temporal Indexes from Multivariate Data. *Journal of Computational and Graphical Statistics*, 1-19. <https://doi.org/10.1080/10618600.2024.2374960>
3. Lee, S., Cook, D., Silva, N. da, Laa, U., Spyrison, N., Wang, E., & **Zhang, H. S.** (2022). The state-of-the-art on tours for dynamic visualization of high-dimensional data. *WIREs Computational Statistics*, 14(4), e1573. <https://doi.org/10.1002/wics.1573>
4. **Zhang, H. S.**, Cook, D., Laa, U., Langrené, N., & Menéndez, P. (2021). Visual Diagnostics for Constrained Optimisation with Application to Guided Tours. *The R Journal*, 13(2), 624–641. <https://doi.org/10.32614/RJ-2021-105>

Submitted:

5. **Zhang, H. S.**, Peng, R. D. (2024). Inside Out: Externalizing Assumptions in Data Analysis as Validation Checks. *Submitted to the Journal of Data Science*. <https://arxiv.org/abs/2501.04296>
6. **Zhang, H. S.**, Cook, D., Langrené, N., & Leung, J. W. Y. (2024). Squintability and Other Metrics for Assessing Projection Pursuit Indexes, and Guiding Optimization Choices. *Submitted to the Journal of Computational and Graphical Statistics*. <https://arxiv.org/abs/2407.13663>

## Software Activities

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*Package maintainer (primary author):*

**tidyindex** A general data pipeline for computing indexes  
**cubble** A data structure for organizing and wrangling spatio-temporal data, 52 stars on GitHub  
**ferri** Visual diagnostics plots for projection pursuit guided tour optimisation

*Package contributor:*

**rj** Tools to help the associate editors with the reviewing process of the R journal  
**rjtools** Tools for authors to write, check, and submit articles to the R Journal, 30 stars on GitHub  
**tourr** Tour methods for multivariate data visualisation, 62 stars on GitHub

*Other activities:*

**2024** Maintainer of CRAN task view: Dynamic Visualizations  
**2024** Reviewer of ROpenSci software peer review  
**2024** Reviewer of John M. Chambers Statistical Software Award 2025  
**2025** Contributor to fix bug in base R on array max.print

## Talks

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Aug 2025	JSM 2025 - <i>topic contributed session</i>	Nashville, USA
Jun 2025	NYU-LMU-Workshop - Making Data Work: Tools for Better Statistical Practice - <i>invited</i>	Munich, Germany
May 2025	SDSS 2025 (Symposium on Data Science and Statistics)	Salt Lake City, USA
Sep 2024	LinStat 2024 - <i>invited</i>	Poprad, Slovakia
Aug 2024	COMPSTAT 2024 - <i>invited</i>	Giessen, Germany
Aug 2024	JSM 2024 - <i>invited paper session</i>	Portland, USA
Aug 2024	John M. Chambers Statistical Software Award Talk - <i>invited</i>	Portland, USA
Dec 2023	CMStatistics 2023 - <i>invited</i>	Berlin, Germany
Sep 2023	Monash Research Tools Workshop - <i>invited</i>	Melbourne, Australia
Feb 2023	The Australian Spatial Econometrics and Statistics Workshop	Melbourne, Australia
Nov 2022	CANSSI Ontario Statistical Software Conference - <i>invite</i>	virtual
Nov 2022	Early Career and Student Statisticians Miniconference	virtual
Jun 2022	UseR! 2022	virtual
Jul 2021	UseR! 2021	virtual

*Department seminar*

Dec 2024	University of Nebraska-Lincoln, Graphic Group	virtual
Oct 2024	UT Austin, Statistics and Data Sciences	Austin, USA
Jan 2024	Humboldt University of Berlin, Faculty of Economics	Germany
May 2023	University of Münster, Institute for Geoinformatics	Germany
Apr 2023	Maynooth University, Department of Mathematics and Statistics	Ireland

## Teaching and Supervision

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*Student supervision:*

2024 summer Co-supervisor for Google Summer of Code R Project: ribbon and segment glyph map  
2024 summer Co-supervisor first year PhD student summer research at University of Texas at Austin

*Instructor for UT Austin coursework:*

2025 Fall SDS 322E Element of Data Science

*Instructor for workshops:*

Apr 2023 Switching between space and time: Spatio-temporal analysis with cubble, R Ladies Vienna  
Dec 2022 Wrangling spatio-temporal data with R, WOMBAT  
Sep 2022 Switching between space and time: Spatio-temporal analysis with cubble, R Ladies Melbourne

*TA for Monash coursework:*

2021, 2022	ETC5512 Wild Caught Data
2020, 2021	ETC5521 Exploratory Data Analysis
2019, 2020	ETC1010/ETC5510 Introduction to Data Analysis

## Service

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2025	Program chair elected: JSM Section of statistical graphics
2024 onwards	Reviewer for the R Journal, The Australian & New Zealand Journal of Statistics, ROpenSci
2024	John M. Chambers Statistical Software Award review panel
2022	Seminar organiser: Monash NUMBATs

## Media Coverage

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2023	Monash Graduate research impact: <a href="#">Crunching the numbers: How new research has revealed the hidden truth behind indexes</a>
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