

Appointment

2024 – present **University of Texas at Austin, Department of Statistics and Data Sciences**
Postdoctoral Fellow working with Prof. Roger Peng

Education

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

2025 KODAQs Guest Researcher Program: 3-week at LMU Munich Germany: **2,500 EUR**.

2025 Winner of the JSM Annual Data Challenge Expo: **1,000 USD**.

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: **2,000 USD**.

2023 Opportunity scholar, Posit::conf(2023). **All expenses covered**.

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

1. **Zhang, H. S.**, Cook, D., Laa, U., Langrené, N., & Menéndez, P. (2025). 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>
2. **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>
3. Lee, S., Cook, D., Silva, N. da, Laa, U., Spyrisson, 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>
5. **Zhang, H. S.**, Peng, R. D.(2025). Inside Out: Externalizing Assumptions in Data Analysis as Validation Checks. *Journal of Data Science (to appear)*. <https://arxiv.org/abs/2501.04296>

Accepted:

6. **Zhang, H. S.**, Cook, D., Langrené, N., & Leung, J. W. Y. (2025). Squintability and Other Metrics for Assessing Projection Pursuit Indexes, and Guiding Optimization Choices. *Tentatively accepted to the Journal of Computational and Graphical Statistics*. <https://arxiv.org/abs/2407.13663>

Submitted:

7. **Zhang, H. S.**, Peng, R. D.(2025). An LLM-based Pipeline for Understanding Decision Choices in Data Analysis from Published Literature. *Submitted to The ACM CHI conference on Human Factors in Computing Systems (CHI 2026)*. <https://github.com/huizezhang-sherry/paper-decisions>

Software Activities

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
ferrn 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

2025 Jun	NYU-LMU-Workshop Making Data Work: Tools for Better Stats. Practice	<i>Munich, Germany</i>
2025 Aug	Joint Statistical Meeting (JSM)	<i>Nashville, USA</i>
2025 May	Symposium on Data Science and Statistics	<i>Salt Lake City, USA</i>
2024 Dec	University of Nebraska-Lincoln Graphic Group	<i>virtual</i>
2024 Oct	UT Austin SDS Department Seminar	<i>Austin, USA</i>
2024 Sep	Intl. Conf. on Trends & Perspectives in Linear Stats. Inference (Lin-Stat 2024)	<i>Poprad, Slovakia</i>
2024 Aug	Computational Statistics (COMPSTAT 2024)	<i>Giessen, Germany</i>
2024 Aug	Joint Statistical Meeting (JSM)	<i>Portland, USA</i>
2024 Aug	John M. Chambers Statistical Software Award Talk	<i>Portland, USA</i>
2024 Jan	Humboldt University of Berlin, Faculty of Economics	<i>Germany</i>
2023 Dec	Computational and Methodological Statistics (CMStatistics 2023)	<i>Berlin, Germany</i>
2023 Sep	Monash Research Tools Workshop	<i>Melbourne, Australia</i>
2023 May	University of Münster, Institute for Geoinformatics	<i>Germany</i>
2023 Feb	The Australian Spatial Econometrics and Statistics Workshop	<i>Melbourne, Australia</i>
2023 Apr	Maynooth University, Department of Mathematics and Statistics	<i>Ireland</i>
2022 Nov	CANSSI Ontario Statistical Software Conference <i>invite</i>	<i>virtual</i>
2022 Nov	Early Career and Student Statisticians Miniconference	<i>virtual</i>
2022 Jun	UseR! 2022	<i>virtual</i>
2021 Jul	UseR! 2021	<i>virtual</i>

Teaching and Supervision

Instructor for UT Austin undergraduate coursework:

2025 Fall SDS322E Elements of Data Sciences

Research 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

TA for Monash undergraduate and graduate coursework:

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

Instructor for workshops:

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

Service

2025	Program Chair-Elect ASA Section of Statistical Graphics
2024 onwards	Reviewer for the R Journal, The Australian & New Zealand Journal of Statistics, Journal of Data Science, and ROpenSci (for software package review)
2024	John M. Chambers Statistical Software Award review panel
2022	Seminar organiser: Monash NUMBATs

Media Coverage

2023	Monash Graduate research impact: Crunching the numbers: How new research has revealed the hidden truth behind indexes
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Referees

1. **Roger D. Peng**, Postdoc Supervisor, roger.peng@austin.utexas.edu, Professor of Statistics, Department of Statistics and Data Sciences at the University of Texas at Austin, Texas, USA
2. **Dianne H. Cook**, PhD Thesis Advisor, dicook@monash.edu, Professor of Statistics, Department of Econometrics and Business Statistics at Monash University, Australia
3. **Nicolas Langrené**, PhD Thesis Advisor, nicolaslangrene@uic.edu.cn, Associate Professor in the UIC Financial Mathematics Programme at Beijing Normal-Hong Kong Baptist University, Zhuhai, Guangdong, China