

EMI TANAKA

WORK EXPERIENCE

- **Senior Lecturer / Lecturer**
Monash University,
Department of Econometrics and Business Statistics
2020 - current
- **Lecturer**
The University of Sydney,
School of Mathematics and Statistics
2017 - 2019
- **Research fellow**
University of Wollongong,
School of Mathematics and Applied Statistics
2014 - 2017

EDUCATION

PhD, Statistics

Statistical Methods for Improving Motif Evaluation

Supervisor: Dr. Uri Keich

School of Mathematics and Statistics

The University of Sydney, Sydney, Australia, 2015

Bachelor of Science (Advanced Mathematics), Honours I

Major in Mathematics and Statistics

The University of Sydney, Sydney, Australia, 2010

PUBLICATIONS

1. Tanaka, E & Amaliah, D (2022) Current state and prospects of r-packages for the design of experiments. [10.48550/arxiv.2206.07532](https://arxiv.org/abs/10.48550/arxiv.2206.07532)
2. Amaliah, D, Cook, D, Tanaka, E, Hyde, K, & Tierney, N (2022) A journey from wild to textbook data to reproducibly refresh the wages data from the national longitudinal survey of youth database. *Journal of Statistics and Data Science Education*, 0 (ja), 1-27. [10.1080/26939169.2022.2094300](https://doi.org/10.1080/26939169.2022.2094300)
3. Tanaka, E, Leung, J, & Cook, D (2022) Commentary on “visualization in operations management research”: Incorporating statistical thinking into visualization practices for decision making in operational management. *INFORMS Journal on Data Science* [10.1287/ijds.2021.0008](https://doi.org/10.1287/ijds.2021.0008)

Contact

✉ emi.tanaka@monash.edu

🐙 github.com/emitanaka

🐦 [@statsgen](https://twitter.com/statsgen)

For more information, please
contact me via email.

Skills

Expert: R, HTML/CSS, LaTeX

Intermediate: Git/GitHub, Python,
Bash, JS

Languages: English (fluent) and
Japanese (conversational)

Interests

Research: experimental design,
mixed models, data visualisation,
visual inference, bioinformatics,
statistical genetics, selective
breeding, software development,
statistical workflow

Non-Research: drawing (but not
good at it), reading (manga,
manhwa and non-fiction books)

*This resume was made with the R package
pagedown.
Last updated on 2022-09-07.*

4. Cook, D, Reid, N, & Tanaka, E (2021) The foundation is available for thinking about data visualization inferentially. *Harvard Data Science Review* 10.1162/99608f92.8453435d Citations: 4.
5. Morota, G, Cheng, H, Cook, D, & Tanaka, E (2021) ASAS-NANP SYMPOSIUM: Prospects for interactive and dynamic graphics in the era of data-rich animal science. *Journal of animal science*, 99 (2) 10.1093/jas/skaa402 Citations: 4.
6. Tanaka, E (2020) Simple outlier detection for a multi-environmental field trial. *Biometrics*, 76 (4), 1374-1382. 10.1111/biom.13216 Citations: 8.
7. Tanaka, E & Hui, F (2019) Symbolic formulae for linear mixed models. *Statistics and data science*, 3-21. 10.1007/978-981-15-1960-4_1 Citations: 3.
8. Hui, F, Tanaka, E, & Warton, D (2018) Order selection and sparsity in latent variable models via the ordered factor LASSO. *Biometrics*, 74 (4), 1311-1319. 10.1111/biom.12888 Citations: 16.
9. Norman, A, Taylor, J, Tanaka, E, Telfer, P, Edwards, J, Martinant, J, & Kuchel, H (2017) Increased genomic prediction accuracy in wheat breeding using a large australian panel. *Theoretical and applied genetics*, 130 (12), 2543-2555. 10.1007/s00122-017-2975-4 Citations: 31.
10. Tanaka, E, Ral, J, Li, S, Gaire, R, Cavanagh, C, Cullis, B, & Whan, A (2017) Increased accuracy of starch granule type quantification using mixture distributions. *Plant methods*, 13, 107. 10.1186/s13007-017-0259-2 Citations: 6.
11. Tanaka, E (2014) Statistical methods for improving motif evaluation. *PhD Thesis*
12. Tanaka, E, Bailey, T, & Keich, U (2014) Improving MEME via a two-tiered significance analysis. *Bioinformatics*, 30 (14), 1965-1973. 10.1093/bioinformatics/btu163 Citations: 20.
13. Liachko, I, Tanaka, E, Cox, K, Chung, S, Yang, L, Seher, A, Hallas, L, Cha, E, Kang, G, Pace, H, Barrow, J, Inada, M, Tye, B, & Keich, U (2011) Novel features of ARS selection in budding yeast *lachancea kluyveri*. *BMC genomics*, 12, 633. 10.1186/1471-2164-12-633 Citations: 26.
14. Tanaka, E, Bailey, T, Grant, C, Noble, W, & Keich, U (2011) Improved similarity scores for comparing motifs. *Bioinformatics*, 27 (12), 1603-1609. 10.1093/bioinformatics/btr257 Citations: 55.

Citation counts are sourced from Google Scholar at 2022-09-07.

SOFTWARE

My software contributions can be found at <https://github.com/emitanaka>.

 edibble

An R-package that implements the grammar of experimental design.

Creator and maintainer. GitHub stars: 168

🔗 Source: <https://github.com/emitanaka/edibble>

🔗 Documentation: <https://edibble.emitanaka.org>

📊 flipbookr

An R-package that parses code, creates partial code builds, delivers code movie

Author. GitHub stars: 184

🔗 Source: <https://github.com/EvaMaeRey/flipbookr>

🔗 Documentation: <https://evamaerey.github.io/flipbookr/>

📊 anicon

An R-package to insert animated icons for R markdown and Shiny apps.

Creator. GitHub stars: 121

🔗 Source: <https://github.com/emitanaka/anicon>

📊 simulate

An R-package for a parametric simulation framework to generate complex multivariate and multilevel data.

Creator and maintainer. GitHub stars: 1

🔗 Source: <https://github.com/emitanaka/simulate>

📊 nestr

An R-package to build hierarchical or nested structures.

Creator and maintainer. GitHub stars: 13

🔗 Source: <https://github.com/emitanaka/nestr>

🔗 Documentation: <https://nestr.emitanaka.org>

📊 monash

A utility R-package with consolidated tools and templates for staffs at Monash University.

Creator and maintainer. GitHub stars: 11

🔗 Source: <https://github.com/numbats/monash>

📊 sugar

An R-package for instructors to create a shiny app for particular unit to review grade and attendance of students.

Supervisor. GitHub stars: 1

🔗 Source: <https://github.com/numbats/sugar>

🔗 Documentation: <https://numbats.github.io/sugar/>

📊 xaringan

An R package for creating slideshows with remark.js through R Markdown.

Contributor. My contribution is the adaptation of the ninja-theme shown in the Documentation. GitHub stars: 1382

🔗 Source: <https://github.com/yihui/xaringan>

🔗 Documentation: [https://github.com/emitanaka/ninja theme](https://github.com/emitanaka/ninja_theme)

📊 anidb

An R-package to fetch data from the anime database at AniDB.

Creator and maintainer. GitHub stars: 1

🔗 Source: <https://github.com/emitanaka/anidb>

📊 ggmatplot

Plot Columns of Two Matrices Against Each Other Using 'ggplot2'

Author. *GitHub stars: 4*

🔗 Source: https://github.com/xuan_liang/ggmatplot

🔗 Documentation: https://xuan_liang.github.io/ggmatplot/

📊 gghdr

Plots of highest density regions (HDR) for ggplot2.

Listed as author but my contribution is small. GitHub stars: 42

🔗 Source: <https://github.com/ropenscilabs/gghdr>

🔗 Documentation: <https://ropenscilabs.github.io/gghdr>

📊 shinycustomloader

Add a custom loader for R shiny.

Creator. *GitHub stars: 111*

🔗 Source: <https://github.com/emitanaka/shinycustomloader>

📊 datalegreyar

Datalegreya, the typeface that melts text and data visualisation, for R markdown.

Creator. *GitHub stars: 41*

🔗 Source: <https://github.com/emitanaka/datalegreyar>

🔗 Tomtom

A motif comparison tool part of the MEME Suite.

The -incomplete-scores is an implementation as a result of Tanaka et al. (2011).

🔗 Documentation: https://meme_suite.org/meme/doc/tomtom.html

💬 TALKS

Links to the slides (if available) are at <https://emitanaka.org/talks.html>.

Below show the last 10 talks.

- The genesis of experimentation
Ihaka Lecture Series
2022-07-28
- Getting the Most Out of Your Experimental Data With Design
Monash Data Futures Insitute
2022-07-07
- Current state and prospects of R-packages for the design of experiments
Statistical Society of Australia Canberra Branch
2022-06-29
- The tale of experimental designs
University of Glasgow Statistics Seminar

2022-05-20

• An anthology of experimental designs

Toronto Data Workshop

2022-03-25

• The Art of Design: Software & Experimental Design

R-Ladies Melbourne

2021-10-26

• Current state and prospects of R-package for the design of experiments

University of Auckland Statistics Seminar

2021-10-14

• The Grammar of Experimental Design

Japanese Joint Statistical Meeting

2021-09-06

• Visual Inference

FukuokaR

2021-03-27

• The Grammar of Experimental Design

TokyoR

2021-01-23

WORKSHOPS

Workshop	Date	Location	Host
Data Visualisation with R	21-22 Feb 2021	Online	methods @ manchester
Advanced Data Visualisation with R	8-9 Dec 2021	Online	Statistical Society of Australia, Canberra Branch
Data Visualisation with R	6 Dec 2021	Online	Statistical Society of Australia, NSW Branch
Data Visualisation with R	15-16 Apr 2021	Online	Statistical Society of Australia, Canberra Branch
Data Wrangling with R	1-2 Dec 2020	Online	Statistical Society of Australia, NSW Branch
Data Visualisation with R	11-12 Nov 2020	Online	Statistical Society of Australia, Victoria Branch
Data Visualisation with R	28-29 Jul 2020	Online	Statistical Society of Australia, Victoria Branch
Tidyverse & R Markdown	1 Dec 2019	Adelaide	International Biometrics Society,

Workshop	Date	Location	Host
Australasia Region			
Building R Packages & R Markdown	19 Nov 2019	Melbourne	Statistical Society of Australia, Victoria Branch
Communicating with Data via R Markdown	4 Oct 2019	Sydney	COMBINE (subcommittee of ABACBS)
Gaining skills in biostatistical consultancy	4 Jul 2019	Melbourne	Statistical Society of Australia, Biostatistics Section
Statistical Methods for Omics Assisted Breeding	12-15 Nov 2018	Tokyo	University of Tokyo

TEACHING

- ETC5523: Communicating with Data
- ETC5512: Wild-Caught Data
- ETC5521: Explonatory Data Analysis
- STAT3012: Applied Linear Models
- STAT5002: Introduction to Statistics
- STAT906: Experimental Design

PROFESSIONAL SERVICE

- Associate Editor
R Journal, <https://journal.r-project.org/>
2022/02-ongoing
- President
Statistical Society of Australia, Victoria Branch
2021/03-ongoing
- Vice President
Statistical Society of Australia, Victoria Branch
2023/03-2024/03
- Assistant Secretary
Statistical Society of Australia, NSW Branch
2017/03-2018/03
- Secretary
Statistical Society of Australia, NSW Branch

2018/03-2020/03

- Social Media Coordinator
International Biometrics Society, Australasian Region
2018/01-ongoing

- Member
useR! 2021, Program Committee
2021/03-2021/03

- Member
Australasian Applied Statistics Conference
2020/2022, Organising Committee
2020/01-ongoing

- Member
Australasian Applied Statistics Conference 2016,
Program and Review Committee
2016/07-2016/12

- Chair
Australasian Applied Statistics Conference 2016,
Local Organisation Committee
2016/01-2016/12

PROFESSIONAL MEMBERSHIPS

- Statistical Society of Australia
- International Biometrics Society

AWARDS & DISTINCTIONS

- SSA President's Award for Leadership in Statistics,
awarded to the 2020-2022 Branch Councils
Statistical Society of Australia
2022
- ARC Linkage Project
Chief Investigator
Three-dimensional Bayesian Modelling of Geological and
Geophysical data
Australian Research Council
2022
\$554,188
- Distinguished Presenter's Award

Statistical Society of Australia
2021

• **ARC Centre of Excellence**

Associate Investigator
ARC Centre of Excellence for Mathematical and Statistical
Frontiers (ACEMS)
Australian Research Council
2020

• **ARC Industrial Transformation Training Centre**

Chief Investigator
Data Analytics for Resources and Environments (DARE)
Australian Research Council
2019
\$3,973,202

• **R Consortium Grant**

Lead Investigator
Symbolic Formulae for Linear Mixed Models
R Consortium
2019
\$6,000

• **Sydney Institute of Agriculture Research Project Grant**

Chief Investigator
Land surface models of carbon and water do not work in
agricultural landscapes where it actually matters they work
Sydney Institute of Agriculture
2018
\$90,000

• **Faculty of Science Research Equipment and Infrastructure Scheme**

Chief Investigator
Sydney bioinformatics and biometrics big data research server
The University of Sydney
2018
\$36,040

• **J.B. Douglas Award**

Nomination and Prize
Statistical Society of Australia, NSW Branch
2011
\$500

• **Tim Brown Prize II**

The University of Sydney
2008
\$275

The University of Sydney
2008
\$750