Nicholas **Tierney**

RESEARCH SOFTWARE ENGINEER

Telethon Kids Institute

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Education

Ph.D. Statistics
Brisbane, QLD, Australia

QUEENSLAND UNIVERSITY OF TECHNOLOGY
2013 - 2018

- Thesis Title: "Statistical Approaches to Revealing Structure in Complex Health Data"
- Primary Supervisor: Professor Kerrie Mengersen

Bachelor of Psychological Science (Honours)
Brisbane, QLD, Australia

UNIVERSITY OF QUEENSLAND
2008 - 2012

- Thesis Title: "How sharp is sharp? The effect of monocular texture on enhancing sharpness"
- Primary Supervisor: Dr. Philip Grove

Software

brolgar
GitHub

TOOLS TO BROWSE OVER LONGITUDINAL DATA GRAPHICALLY AND ANALYTICALLY. EXTENDS GGPLOT2, TSIBBLE, AND FEASTS
2019

- 98 stars
- 1,744 downloads

syn
CRAN

A ZERO DEPENDENCY R PACKAGE THAT LISTS SYNONYMS AND ANTONYMS.
2018

- 43 stars
- 6,885 downloads

visdat
CRAN

PRELIMINARY EXPLORATORY VISUALISATION OF DATA
2017

- 384 stars
- 369,649 downloads

naniar
CRAN

TIDY DATA STRUCTURES, SUMMARIES, AND VISUALISATIONS FOR MISSING DATA. EXTENDS GGPLOT2 AND DPLYR.
2017

- 578 stars
- 389,659 downloads

mmcc
GitHub

FAST AND TIDY METHODS FOR SUMMARISING MCMC CHAINS USING DATA.TABLE. EXTENDS BROOM
2016

- 20 stars

maxcovr
GitHub

TOOLS FOR LOCATION ANALYSIS AND SOLVING THE MAXIMAL COVERAGE LOCATION PROBLEM USING C++
2016

- 34 stars

broomstick
GitHub

CONVERT DECISION TREE OBJECTS INTO TIDY DATA FRAMES. EXTENDS BROOM
2016

- 28 stars

Employment

Research Software Engineer
Perth, WA, Aus

TELETHON KIDS INSTITUTE
2021 - Current

- Maintained {greta} and develop statistical software

Lecturer
Melbourne, VIC, AUS

MONASH UNIVERSITY
2019 - 2020

- Taught ETC1010, developed assessment and lectures on introduction to data analysis

Research Fellow

Monash University

- Created {visdat} and {naniar} packages to explore data

Grants

R Consortium
Global

A UNIFIED PLATFORM FOR MISSING VALUES METHODS AND WORKFLOWS
2018-2019

- Developed CRAN Task view and platform for sharing missing data methods
- Funding amount: $20,000 USD
- Co-investigators: Josse, Julie, Nathalie Vialeniex, Imke Mayer

ACEMS International Mobility Programme
Australia - USA

MCMC DIAGNOSTICS & RESEARCH IMPACT
2019

- Visited Johns Hopkins University and UC Berkeley to discuss MCMC diagnostics and research impact
- Funding amount: $10,000 AU

Government Scholarship
Brisbane, QLD, Australia

AUSTRALIAN POSTGRADUATE AWARD
2013-2017

- Funding amount: $98,000

Industry Scholarship
Brisbane, QLD, Australia

INDUSTRY DOCTORAL TRAINING CENTRE TOP UP
2013-2017

- Funding amount: $40,000

Invited Academic

Dr. Karthik Ram
Berkeley, CA, USA

BERKELEY INSTITUTE OF DATA SCIENCE (BIDS)
2018 - 2020

- Visited annually for 1-3 weeks
- Develop best practices for publishing data sources
- Identify current technology issues in modern data science

Prof. Roger Peng
Baltimore, MD, USA

JOHNS HOPKINS BLOOMBERG SCHOOL OF PUBLIC HEALTH
2019

- Collaborate on understanding and measuring MCMC convergence.
- Develop MCMC diagnostics

Prof. Antonietta Mira and Professor Angelo Auricchio
Lugano, Ticino, Switzerland

INTER-DISCIPLINARY INSTITUTE OF DATA SCIENCE AT UNIVERSITÀ DELLA SVIZZERA ITALIANA (USI)
2016 - 2017

- Develop methods for optimal placement of Automatic Electronic Defibrillators (AEDs) in Switzerland

Published Articles

Missing Data: Current Practice in Football Research and Recommendations for Improvement
Science and Medicine in Football

DAVID N. BORG AND ROBERT NGUYEN AND NICHOLAS J. TIERNEY
2021

Comment On: Moving Sport and Exercise Science Forward: A Call for the Adoption of More Transparent Research Practices
Sports Medicine

BORG, DAVID N. AND BON, JOSHUA J. AND SAINANI, KRISTIN L. AND BAGULEY, BRENTON J. AND **TIERNEY, NICHOLAS J.** AND DROVANDI, CHRISTOPHER
2020

A Bayesian Spatiotemporal Statistical Analysis of Out-of-Hospital Cardiac Arrests
Biometrical Journal

PELUSO, STEFANO AND MIRA, ANTONIETTA AND RUE, HÅVARD AND **TIERNEY, NICHOLAS J.** AND BENVENUTI, CLAUDIO AND CIANELLA, ROBERTO AND CAPUTO, MARIA LUCE AND AURICCHIO, ANGELO
2020

An Introduction to Software Tools, Data, and Services for Geospatial Analysis of Stroke Services
Frontiers in Neurology

PADGHAM, MARK AND BOEING, GEOFF AND COOLEY, DAVID AND **TIERNEY, NICHOLAS J.** AND SUMNER, MICHAEL AND PHAN, THANH G. AND BEARE, RICHARD
2019

Evaluating Health Facility Access using Bayesian Spatial Models and Location Analysis Methods
PLOS ONE

TIERNEY, NICHOLAS J. AND MIRA, ANTONIETTA AND REINHOLD, H. JOST AND ARBIA, GIUSEPPE AND CLIFFORD, SAMUEL AND AURICCHIO, ANGELO AND MOCCETTI, TIZIANO AND PELUSO, STEFANO AND MENGERSEN, KERRIE L.
2019

Novel Relocation Methods for Automatic External Defibrillator Improve Out-of-Hospital Cardiac Arrest Coverage under Limited Resources

Resuscitation

Tierney, Nicholas J. and Reinhold, H. Jost and Mira, Antonietta and Weiser, Martin and Burkart, Roman and Benvenuti, Claudio and Auricchio, Angelo

2018

Visdat: Visualising Whole Data Frames

The Journal of Open Source Software

Tierney, Nicholas J.

2017

Visualisation and Statistical Modelling Techniques for the Management of Inventory Stock Levels

ANZIAM

Sweatman, Winston L., and McGree, James and Carstens, C. Jacobien and Foster, Kylie J. and Liu, Shen and Tierney, Nicholas J. and Tredenick, Eloise and Zaitouny, Ayham

2016

Using Decision Trees to Understand Structure in Missing Data

BMJ Open

Tierney, Nicholas J. and Harden, Fiona A. and Harden, Maurice J.

2015

Book Chapters

Bayesian Modelling to Assist Inference on Health Outcomes in Occupational Health Surveillance

Case Studies in Applied Bayesian Data Science

Tierney, Nicholas J. and Clifford, Samuel and Drovandi, Christopher C. and Mengersen, Kerrie L.

2020

Statistical Methods for Hospital Monitoring

Wiley StatsRef: Statistics Reference Online

Morton, Anthony and Whitby, Michael and Tierney, Nicholas J. and Sibanda, Nokuthaba and Mengersen, Kerrie

2016

Preprints

When to Impute? Imputation Before and During Cross-Validation

http://arxiv.org/abs/2010.00718

Jaeger, Byron C. and Tierney, Nicholas J. and Simon, Noah R.

2020

Expanding Tidy Data Principles to Facilitate Missing Data Exploration, Visualization and Assessment of Imputations

http://arxiv.org/abs/1809.02264

Tierney, Nicholas J. and Cook, Dianne H.

2020

A Realistic Guide to Making Data Available Alongside Code to Improve Reproducibility

http://arxiv.org/abs/2002.11626

Tierney, Nicholas J. and Ram, Karthik

2020

A Simple Guide to S3 Methods

http://arxiv.org/abs/1608.07161

Tierney, Nicholas J.

2016

Papers in Preparation

Brolgar: BRowse Over Longitudinal Data Graphically and Analytically in R

R Journal

Nicholas J. Tierney, Dianne Cook, Tania Prvan

2020

What We See in Rainbows: Do Different Colour Palettes Change Weather Maps Interpretation?

TBD

Nicholas J. Tierney, Lauren Kennedy, Adam Sparks

2021

The Effect of Fire Frequency on Insectivorous Bats and their Habitat in the Monsoonal Woodlands of Cape York Peninsula, Australia.

Diversity and Distributions

Julie Broken-Brow, Nicholas J. Tierney, Sandra Penman, Kyle N. Armstrong, and Luke K.-P. Leung

2021

Presentations

The Use of Colour in Graphics: A Journey Through the Body & Mind to the Screen

Online

Monash Data Fluency (Invited Seminar)

2020-06-26

Data! Data! Data! — *Seattle, WA, USA*

UNIVERSITY OF WASHINGTON (INVITED SEMINAR) — *2020-02-14*

Making Better Spaghetti — *San Francisco, CA, USA*

RSTUDIO::CONF2020 (INVITED SPEAKER) — *2020-01-29*

Exploring and Understanding the Individual Experience from Longitudinal Data, or...How to Make Better Spaghetti (Plots) — *Brisbane, QLD, Australia*

OZVIS 2019 (KEYNOTE SPEAKER) — *2019-11-21*

Exploring and Understanding the Individual Experience from Longitudinal Data, or...How to Make Better Spaghetti (Plots) — *Canberra, ACT, Australia*

AUSTRALIA NATIONAL UNIVERSITY (INVITED SEMINAR) — *2019-11-15*

Are We There Yet? Testing the Effectiveness of Graphics as MCMC Diagnostics — *Baltimore, MD, USA*

JOHNS HOPKINS BLOOMBERG SCHOOL OF PUBLIC HEALTH (INVITED SEMINAR) — *2019-01-09*

Prior to 2019, I have delivered a keynote presentation in Seoul, South Korea, and invited seminars and talks in Australia, USA, Switzerland, France, Belgium, and England.

Awards

ACEMS Impact and Engagement Award — *Australia*

FOR ACTIVELY TRANSLATING RESEARCH FINDINGS TO APPLICATIONS, USE, AND UPTAKE OUTSIDE OF ACADEMIA ($1,000) — *2019*

EJC Pitman Prize (Runner Up) — *Melbourne, VIC, Australia*

THE STATISTICAL SOCIETY OF AUSTRALIA — *2018*

Thesis nominated for University Doctoral Outstanding Thesis Award — *Brisbane, QLD, Australia*

PHD THESIS EXAMINATION — *2017*

Vice-Chancellor's Performance Award — *Brisbane, QLD, Australia*

INNOVATION IN TEACHING IN SEB113 ($7,500) — *2015*

First Place for talk: "The Joy of Stats" — *Brisbane, QLD, Australia*

SESSIONAL TEACHING AND REFLECTION SHOWCASE (STARS) — *2015*

Service

I am an active member of the statistics and open source software communities. I recently joined the R Journal as an Associate Editor, served on the organising committee of UseR! 2018 in Brisbane, and was the founding and principal organiser of the annual rOpenSci Ozunconference, from 2016 - 2018, and assistant organiser in 2019. I have been the organising chair of two university research groups, the Non-Uniform Monash Business Analytics Team (NUMBAT) group at Monash, and the Bayesian Research and Applications Group (BRAG) at Queensland University of Technology. I have been a member of the Statistical Society of Australia since 2013, serving as young statistician representative of Queensland, and assistant chair of biostatistics (2013-2016), and a general committee member of the Victoria branch (2017 - 2019).

Teaching

Lecturer
MONASH UNIVERSITY
Melbourne, VIC, Australia
2019 - 2020
- Developed assessment and lectures for ETC1010, introduction to data analysis

Teaching Assistant
QUEENSLAND UNIVERSITY OF TECHNOLOGY
Brisbane, QLD, Australia
2015
- Tutor for course SEB113, an introductory course on statistics

Lab Content Creator
QUEENSLAND UNIVERSITY OF TECHNOLOGY
Brisbane, QLD, Australia
2015
- Created award-winning practical lab content for course SEB113

Workshops

R Markdown for Scientists
RMD4SCI.NJTIERNEY.COM
Global
2018 -
- Focussing on scientists needs (workflow, citations, references)
- Delivered 6 times in Melbourne, Canberra, and Seattle

Building R Packages and using git and GitHub
ROPENSCI OZUNCONFERENCE
Australia
2017 - 2019
- Designed for absolute beginners
- Delivered 3 times, with Prof. Roger Peng, and Dr. Saras Windecker

Software Carpentry Instructor Trainer
THE CARPENTRIES
Global
2018 - 2019
- Teaching best practices on how to teach software coding to other instructors

Instructor
DATACAMP
Global
2018
- Developed online course on Handling Missing Data. Produced tutorials and instructional videos

Missing Data Imputations
USER!2018
Brisbane, QLD, Australia
2018
- Joint course with Prof. Julie Josse, covering visualising, exploring, and imputing missing data.

Reproducible Reporting Using RMarkdown and GitHub
ANGELTR R CONFERENCE
Anglet, France
2017
- Course teaching basics of Rmarkdown and GitHub

Developing Bayesian Models for Ranking Academic Papers
BAYES ON THE BEACH
Gold coast, QLD, Australia
2015
- Moderated discussion on Bayesian approaches to ranking papers to account for the number of years since publishing