

Nicholas Tierney

RESEARCH SOFTWARE ENGINEER

Telethon Kids Institute

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Education

Ph.D. Statistics

QUEENSLAND UNIVERSITY OF TECHNOLOGY

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

Brisbane, QLD, Australia

2013 - 2018

Bachelor of Psychological Science (Honours)

UNIVERSITY OF QUEENSLAND

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

Brisbane, QLD, Australia

2008 - 2012

Employment

Research Software Engineer

TELETHON KIDS INSTITUTE

- Maintained {greta} and develop statistical software, develop and maintain COVID-19 modelling for Australian Government

Perth, WA, Aus

2021 - Current

Lecturer

MONASH UNIVERSITY

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

Melbourne, VIC, AUS

2019 - 2020

Research Fellow

MONASH UNIVERSITY

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

Melbourne, VIC, AUS

2017 - 2019

Published Articles

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

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

Science and Medicine in Football

2021

Common-Sense Approaches to Sharing Tabular Data Alongside Publication

NICHOLAS J. TIERNEY AND KARTHIK RAM

Patterns

2021

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

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

Sports Medicine

2020

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

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

Biometrical Journal

2020

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

TIERNEY, NICHOLAS J. AND CLIFFORD, SAMUEL AND DROVANDI, CHRISTOPHER C. AND MENGENSEN, KERRIE L.

2020

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

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

Frontiers in Neurology

2019

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

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 MENGENSEN, KERRIE L.

PLOS ONE

2019

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

TIERNEY, NICHOLAS J. AND REINHOLD, H. JOST AND MIRA, ANTONIETTA AND WEISER, MARTIN AND BURKART, ROMAN AND BENVENUTI, CLAUDIO AND AURICCHIO, ANGELO

Resuscitation

2018

Visdat: Visualising Whole Data Frames

TIERNEY, NICHOLAS J.

The Journal of Open Source Software

2017

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

SWEATMAN, WINSTON L., AND MCGREE, JAMES AND CARSTENS, C. JACOBIE AND FOSTER, KYLIE J. AND LIU, SHEN AND TIERNEY, NICHOLAS J. AND TREDENICK, ELOISE AND ZAITOUNY, AYHAM

ANZIAM

2016

Using Decision Trees to Understand Structure in Missing Data

TIERNEY, NICHOLAS J. AND HARDEN, FIONA A. AND HARDEN, MAURICE J.

BMJ Open

2015

Grants

R Consortium

CONTINUING TO IMPROVE R'S ABILITY TO VISUALISE AND EXPLORE MISSING VALUES

- Develop and improve methods for exploring missing data in R
- Funding amount: \$5,000 USD

Global

2022

R Consortium

A UNIFIED PLATFORM FOR MISSING VALUES METHODS AND WORKFLOWS

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

Global

2018-2019

ACEMS International Mobility Programme

MCMC DIAGNOSTICS & RESEARCH IMPACT

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

Australia - USA

2019

Government Scholarship

AUSTRALIAN POSTGRADUATE AWARD

- Funding amount: \$98,000

Brisbane, QLD, Australia

2013-2017

Industry Scholarship

INDUSTRY DOCTORAL TRAINING CENTRE TOP UP

- Funding amount: \$40,000

Brisbane, QLD, Australia

2013-2017

Invited Academic

Prof. Kerrie Mengersen

QUEENSLAND UNIVERSITY OF TECHNOLOGY

- Visited to present invited talk on using {greta} for scalable statistical computing

Brisbane, Australia

2021

Dr. Karthik Ram

BERKELEY INSTITUTE OF DATA SCIENCE (BIDS)

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

Berkeley, CA, USA

2018 - 2020

Prof. Roger Peng

JOHNS HOPKINS BLOOMBERG SCHOOL OF PUBLIC HEALTH

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

Baltimore, MD, USA

2019

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

Software

conmat

CREATE CONTACT MATRICES FROM POPULATION DATA

- 3 stars

[GitHub](#)

2021

yahtsee

PROVIDE TOOLS AROUND FITTING HIERARCHICAL TIME SERIES MODELS FOR DATA COMMONLY FOUND IN MALARIA.

- 2 stars

[GitHub](#)

2021

brolgar

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

- 101 stars
- 8,661 downloads

[GitHub](#)

2019

visdat

PRELIMINARY EXPLORATORY VISUALISATION OF DATA

- 402 stars
- 782,954 downloads

[CRAN](#)

2017

naniar

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

- 596 stars
- 826,864 downloads

[CRAN](#)

2017

maxcovr

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

- 37 stars

[GitHub](#)

2016

Presentations

Recognising Research Software in Academia

UNSW (INVITED SEMINAR)

[Online](#)

2021-10-29

Tangling is Easy but Untangling is Hard. Some Advice on Exploratory Data Analysis for Longitudinal Data

JOINT STATISTICAL MEETINGS (INVITED TALK)

[Online](#)

2021-08-09

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

MONASH DATA FLUENCY (INVITED SEMINAR)

[Online](#)

2020-06-26

Data! Data! Data!

UNIVERSITY OF WASHINGTON (INVITED SEMINAR)

[Seattle, WA, USA](#)

2020-02-14

Making Better Spaghetti

RSTUDIO::CONF2020 (INVITED SPEAKER)

[San Francisco, CA, USA](#)

2020-01-29

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

OZVIS 2019 (KEYNOTE SPEAKER)

[Brisbane, QLD, Australia](#)

2019-11-21

Are We There Yet? Testing the Effectiveness of Graphics as MCMC Diagnostics

JOHNS HOPKINS BLOOMBERG SCHOOL OF PUBLIC HEALTH (INVITED SEMINAR)

[Baltimore, MD, USA](#)

2019-01-09

Empowering People with Community, Software, and Peer Review

RUCK: R USERS CONFERENCE KOREA (KEYNOTE SPEAKER)

[Seoul, South Korea](#)

2018-10-23

Find the Best Locations for Facilities using 'maxcovr'

USER! 2018 (SPEAKER)

[Brisbane, QLD, Australia](#)

2018-07-13

Awards

ACEMS Impact and Engagement Award

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

Australia

2019

EJC Pitman Prize (Runner Up)

THE STATISTICAL SOCIETY OF AUSTRALIA

Melbourne, VIC, Australia

2018

Thesis nominated for University Doctoral Outstanding Thesis Award

PHD THESIS EXAMINATION

Brisbane, QLD, Australia

2017

Vice-Chancellor's Performance Award

INNOVATION IN TEACHING IN SEB113 (\$7,500)

Brisbane, QLD, Australia

2015

First Place for talk: "The Joy of Stats"

SESSIONAL TEACHING AND REFLECTION SHOWCASE (STARS)

Brisbane, QLD, Australia

2015

Service

I am an active member of the statistics and open source software communities. I have been an Associate Editor for the R Journal since 2021, served on the organising committee of User! in 2018, and was founding and principal organiser of the annual rOpenSci Ozunconference, from 2016 - 2018. 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 served with the Statistical Society of Australia since 2013, as young statistician representative of Queensland, assistant chair of biostatistics (2013-2016), and co-founded the section "Statistical Computing and Visualisation" with Di Cook in 2021.

Teaching

Lecturer

MONASH UNIVERSITY

- Developed assessment and lectures for ETC1010, introduction to data analysis

Melbourne, VIC, Australia

2019 - 2020

Teaching Assistant

QUEENSLAND UNIVERSITY OF TECHNOLOGY

- Tutor for course SEB113, an introductory course on statistics

Brisbane, QLD, Australia

2015

Lab Content Creator

QUEENSLAND UNIVERSITY OF TECHNOLOGY

- Created award-winning practical lab content for course SEB113

Brisbane, QLD, Australia

2015

Workshops

An introduction to Bayesian modelling using greta

SSA

- Teaching fundamental Bayesian statistics aimed at scientists needs

Global

2021

R Markdown for Scientists

RMD4SCI.NJTIERNEY.COM

- Focussing on scientists needs (workflow, citations, references)
- Delivered 6 times in Melbourne, Canberra, and Seattle

Global

2018 -

Software Carpentry Instructor Trainer

THE CARPENTRIES

- Teaching best practices on how to teach software coding to other instructors

Global

2018 - 2019

Missing Data Imputations

USER!2018

- Joint course with Prof. Julie Josse, covering visualising, exploring, and imputing missing data.

Brisbane, QLD, Australia

2018

Reproducible Reporting Using RMarkdown and GitHub

ANGELTR R CONFERENCE

- Course teaching basics of Rmarkdown and GitHub

Anglet, France

2017