

Shamindra Shrotriya

PhD Candidate, Statistics

Education

- 2017-Pres **PhD Statistics & Data Science**, *Carnegie Mellon University, USA.*
 - Expected June 2022
- 2017-2019 **M.S. Statistics & Data Science**, *Carnegie Mellon University, USA.*
 - GPA of 3.92/4.0
- 2015-2016 **M.A. Statistics**, *University of California at Berkeley, USA.*
 - GPA of 3.9/4.0
- 2003-2007 **BCom (Actuarial/Finance)**, *University of New South Wales, Australia.*
 - Graduated with Distinction
 - UNSW Co-op Scholar in Actuarial Statistics

Research Experience

- 2018-2019 **Advanced Data Analysis (ADA) Project**, *Carnegie Mellon University, Pittsburgh, PA.*
 - Advised by: Prof. Max G'Sell and Prof. Avniel Singh Ghuman
 - Investigated the dynamic functional connectivity in human epilepsy patients using iEEG data
 - Successfully presented oral defense of research work
- 2017 **Research Associate**, *University of California, Berkeley, CA.*
 - Advised by: Prof. Bin Yu and Prof. Ben Brown
 - Investigated the statistical properties of the iterative Random Forests (iRF) algorithm
 - Co-developed the Python implementation of the iRF algorithm
 - Helped complete a successful four-year NSF BIGDATA grant proposal for this project
- 2016 **Geisinger Collider Project**, *University of California, Berkeley, CA.*
 - Joint work with Rebecca Barter (UC Berkeley)
 - Investigated using Electronic Medical Record data to determine whether a pneumonia patient will develop Chronic Obstructive Pulmonary Disease (COPD)
 - Winner - Best paper award and overall competition

Industry Experience

- 2014-2015 **Data Science Infrastructure Team Lead**, *freelancer.com, Sydney, Australia.*
 - Designed and implemented a prototype of the new A/B testing framework
 - Co-designed and administered the entire Extract-Transform-Load (ETL) process written with Go and AWS Redshift
 - Designed and improved the internal metrics monitoring dashboard

Department of Statistics and Data Science, Carnegie Mellon University

☎ +1 415 937 3701 • ✉ shamindra@cmu.edu • 🌐 shamindras.com

🐦 [shamindraas](https://twitter.com/shamindraas) • 🌐 [shamindras](https://www.linkedin.com/company/shamindras)

1/4

- 2012-2014 **Data Scientist**, *Quantium Consulting*, Sydney, Australia.
- Led the end-to-end development of the behavioural ‘lifestage’ customer classifier for the entire 7 million Woolworths Supermarket customer base
 - Led the data-driven electronic marketing strategy for Woolworths Life Insurance which included developing scoring models (GLMs) and conducting A/B tests to optimise response rates
 - Co-designed and developed the National Australia Bank Online Retail Sales Index
- 2011-2012 **Microinsurance Fellow**, *UN - International Labor Organization*, Pune, India.
- Wrote a report on the best actuarial pricing practices to be undertaken by microinsurance organisations
- 2007-2011 **Senior Actuarial Consultant**, *PricewaterhouseCoopers*, Sydney, Australia.
- Built visualization dashboards for monitoring key risk metrics for Insurance Australia Group, Australias’ largest private general insurer
 - Developed key reporting metrics used by Qantas airlines to assess key drivers and trends behind their Qantas Frequent Flyer Program (the largest customer loyalty program in Australia)

Teaching Experience

Head Teaching Assistant

- 2019 **STAT 36-350 (Statistical Computing)**, *Carnegie Mellon University*, Pittsburgh, PA.
- Instructor: Prof. Peter Freeman
 - Developed R programming course materials
 - Managed other TAs and grading process, held office hours
- 2018 **STAT 36-700 (Intermediate Theoretical Statistics)**, *Carnegie Mellon University*, Pittsburgh, PA.
- Instructor: Prof. Larry Wasserman
 - Wrote HW solutions, helped with HW/exam design
 - Managed other TAs and grading process, held office hours
- 2016 **STAT133 (Computing with Data)**, *University of California*, Berkeley, CA.
- Instructor: Prof. Gaston Sanchez
 - Developed R programming course materials
 - Held weekly 4hrs of tutorial sessions
 - Managed other TAs and grading process, held office hours
 - Winner - Outstanding Graduate Student Instructor award

Teaching Assistant

- 2019 **STAT 36-750 (Graduate Statistical Computing)**, *Carnegie Mellon University*, Pittsburgh, PA.
- Instructor: Prof. Alex Reinhart
 - Wrote HW solutions, graded 200+ Github Pull Requests
 - Held office hours (code review)
- 2018 **STAT 36-350 (Statistical Computing)**, *Carnegie Mellon University*, Pittsburgh, PA.
- Instructor: Prof. Ryan Tibshirani
 - Reviewed course materials, held office hours

Department of Statistics and Data Science, Carnegie Mellon University

☎ +1 415 937 3701 • ✉ shamindra@cmu.edu • 🌐 shamindras.com

🐦 [shamindraas](https://twitter.com/shamindraas) • 🌐 [shamindras](https://www.linkedin.com/company/shamindras)

- 2017 **STAT 36-401 (Modern Regression)**, *Carnegie Mellon University, Pittsburgh, PA.*
- Instructor: Prof. April Galyardt
 - Reviewed course materials, held office hours

Publications

Papers

1. Barter, R and S Shrotriya (June 2016). Integrated Data Analysis for Early Warning of Lung Failure. *ODBMS*.

Posters

- Dec 2018 **Efficient Convex Estimation of the Time Varying Bradley-Terry Model**, *COPTS conference, Pittsburgh, PA.*

Awards and Honors

- 2017 **Outstanding Graduate Student Instructor**, *University of California, Berkeley, United States.*
- 2016 **Elizabeth Scott Memorial Award**, *University of California, Berkeley, United States.*
- 2016 **Best Paper and competition winner**, *Geisinger Health Collider Project.*
- 2012 **Microinsurance Fellowship**, *UN - International Labor Organization.*
- 2007 **Associate of the Institute of the Actuaries Australia.**
- 2003 **Co-op Industrial Scholarship in Actuarial Studies**, *University of New South Wales, Australia.*
- 2003 **Council Tertiary Scholarship**, *Blacktown Council, Sydney, Australia.*
- 2002 **Entry Award Scholarship in Engineering (declined)**, *University of Sydney, Australia.*
- 2002 **Australian Students Prize for Academic Excellence**, *Australian Federal Government.*
- 2002 **Premiers Award for Academic Excellence**, *NSW Government, Australia.*
- 2002 **University Admissions Index (UAI) 99.90 (top 0.1% in State).**

Department of Statistics and Data Science, Carnegie Mellon University

☎ +1 415 937 3701 • ✉ shamindra@cmu.edu • 🌐 shamindras.com
🐦 [shamindraas](https://twitter.com/shamindraas) • 🌐 [shamindras](https://www.linkedin.com/company/shamindras)

Software

- 2017 **Co-developer of the iterative Random Forests (iRF) python implementation**, <https://github.com/Yu-Group/iterative-Random-Forest>.
 - Python package for the Iterative Random Forests (iRF) algorithm to detect predictive and stable high-order interactions
- 2016 **Co-developer of the mousestyles neuroscience package**, <https://github.com/berkeley-stat222/mousestyles>.
 - Python package for several statistical utilities to analyze the effects of genetics on behavior in mice
- 2015 **Co-developer of Adaptive Rejection Sampling (ars) package**, <https://github.com/shamindras/ars>.
 - R package containing several adaptive rejection sampling (ARS) utilities

Presentations

Talks

- Dec 2018 **Introduction to the Tidyverse**, *Guest Lecture, STAT 36-350*, Pittsburgh, PA.
- Dec 2018 **Functional Connectivity in iEEG Data**, *Advanced Data Analysis Presentation*, Pittsburgh, PA.
- Jul 2016 **Predicting COPD in pneumonia patients**, *Geisinger Collider Project*, Berkeley, CA.

Skills

- Proficient R, Python, SQL (Redshift/SQL Server/Teradata), Git/Github, \LaTeX .
- Competent Bash, Make, SAS.