

# Shamindra Shrotriya

PHD CANDIDATE, STATISTICS AND DATA SCIENCE

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## Education

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### Carnegie Mellon University

Ph.D. in Statistics & Data Science

Pittsburgh, PA

2022 (Exp.)

M.S. in Statistics & Data Science

2020

### University of California, Berkeley

M.A. in Statistics

Berkeley, CA

2016

### University of New South Wales

BCom (Actuarial Science & Finance)

Sydney, NSW

2007

## Industry Experience

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### freelancer.com

Team Lead, Data Science Infrastructure

Sydney, Australia

2014 - 2015

- Designed and implemented a prototype of the new A/B testing framework.
- Co-designed and administered the Extract-Transform-Load (ETL) process written in Go and AWS Redshift.
- Co-designed the internal metrics monitoring dashboard.

### Quantium Consulting

Data Scientist

Sydney, Australia

2012 - 2014

- Led the end-to-end development of the behavioural 'lifestage' customer classifier for the entire 7 million Woolworths Supermarket customerbase.
- 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 (NORSI).

### United Nations - International Labor Organization

Microinsurance Fellow

Pune, India

2011 - 2012

- Selected as microinsurance fellow based on industry experience and academic merit.
- Wrote a report on the best actuarial pricing practices to be undertaken by microinsurance organisations.

### PwC

Senior Actuarial Consultant

Sydney, Australia

2007 - 2011

- 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).

## Publications

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### PAPERS

1. Bong, Heejong, Li, W., Shrotriya, S., & Rinaldo, A. (2020). Nonparametric estimation in the dynamic bradley-terry model. *The 23rd International Conference on Artificial Intelligence and Statistics, AISTATS 2020, 03-05 June 2020, Palermo, Sicily, Italy*, 21–30.

2. Barter, R., & Shrotriya, S. (2016). Integrated data analysis for early warning of lung failure. *ODBMS.org*.

## PREPRINTS

1. Fogliato, R., Shrotriya, S., & Kuchibhotla, A. K. (2021). *Maars: Tidy inference under the “Models as Approximations” framework in R*.

## WORKSHOPS

1. Dalmaso, N., Reinhart, A., & Shrotriya, S. (2019). Predictive inference of a wildfire risk pipeline in the united states. *NeurIPS 2019 Workshop, Tackling Climate Change with Machine Learning*.
2. Bong, H., Li, W., & Shrotriya, S. (2019). Efficient estimation of distribution-free dynamics in the bradley-terry model. *Carnegie Mellon Sports Analytics Conference (CMSAC)*.

## Presentations

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### useR! 2021: The R Conference (Regular Talk)

Virtual

maars: Tidy inference under misspecified statistical models in R

2021

### NeurIPS 2019 Climate Change Workshop (Spotlight)

Vancouver, BC

Predictive inference of a wildfire risk pipeline in the United States

2019

## Honors and Awards

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### rstudio::global(2021) Diversity Scholar (RStudio)

2021

### NGC Wildfire Research Scholar (American Australian Association)

2020

### TA of the Year (Carnegie Mellon University)

2020

### CMSAC Best Paper Award (Carnegie Mellon University)

2019

### NeurIPS Climate Change Workshop Travel Award

2019

### Outstanding Graduate Student Instructor (University of California, Berkeley)

2017

### Elizabeth Scott Memorial Award (University of California, Berkeley)

2016

### Best Paper and Competition Winner (Geisinger Health Collider Project)

2016

## Teaching Experience

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### Statistical Computing - CMU 36-350 (head-TA)

With Prof. Ryan Tibshirani (Fall 2021), Prof. Mohamed Farag (Spring 2020), Prof. Peter Freeman (Spring/Fall 2019)

### Intermediate Statistics - CMU 36-700 (head-TA)

With Prof. Larry Wasserman (Fall 2018)

## Software

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### maars R Package

2021

Co-creator of the R package to implement tidy inference under the ‘Models as Approximations’ framework. Joint work with Riccardo Fogliato and Arun Kumar Kuchibhotla.

### Iterative Random Forests (iRF) Python Package

2017

Co-Developer of Python package to detect predictive and stable high-order interactions.

## Technical Skills

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**Proficient:** R, python, SQL (Redshift/SQL Server/Teradata), Git/Github, LaTeX, bash

**Competent:** Make, SAS