IAN WAUDBY-SMITH

Statistics PhD Student at Carnegie Mellon University

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EXPERIENCE

Research Student

The Hospital for Sick Children (SickKids)

Apr 2019 – Aug 2019 Toronto, Canada

Advisor: Eleanor Pullenayegum

- Developed statistical models to estimate measures of quality-of-life and wrote R packages for each of them.
- Ran large-scale simulations on a high-performance computing cluster.
- Currently writing paper summarizing methods & results.

Research Assistant

University of Waterloo

May 2016 – June 2018 Waterloo, Canada

Project 1: Nursing notes, sentiment, and survival

Advisors: Joel Dubin & Joon Lee

- Performed sentiment analysis with Python on millions of clinical notes written by nurses — link to paper.
- Used R to fit logistic regression and survival models.

Project 2: Robust tests for zero-inflated data

Advisor: Pengfei Li

- Wrote an R package that makes t-tests more robust for zero-inflated data — link to R package on official CRAN repository.
- Made algorithms up to 20 times faster by parallelizing code on a high-performance computing cluster.

Student Analyst

Cancer Care Ontario

Jan 2016 – Apr 2016 Toronto, Canada

Advisor: Amy Liu

- Developed a model in R to forecast prevalence of chronic kidney disease in Ontario — link to conference poster.
- Wrote algorithms to quantify similarity between cancer treatments.

R&D Developer

International Financial Data Services

Apr 2015 – Aug 2015 Toronto, Canada

- Wrote a MapReduce program to perform fuzzy string comparison.
- Built a distributed application on the Ethereum blockchain network.

PUBLICATIONS

Journal Articles

- **Ian Waudby-Smith**, Nam Tran, Joel A Dubin, and Joon Lee (2018). "Sentiment in nursing notes as an indicator of out-of-hospital mortality in intensive care patients". In: *PLOS ONE* 13.6.

Conference Presentations

- **Ian Waudby-Smith**, Zhihui Amy Liu, Ali Vahit Esensoy, Jessica Moffatt, and Olli Saarela (2016). "*Multi-state Models for Chronic Kidney Disease Prevalence Projections in Ontario*". In: Statistical Society of Canada Annual Meeting.

EDUCATION

PhD, Statistics

Carnegie Mellon University

2019 – present Pittsburgh, PA

- Research: non/semi-parametric methods, anytime-valid inference, causality, targeted learning
- GPA: 4.2/4.0

BMath, Pure Mathematics and Statistics Joint Honours (Co-op)

University of Waterloo

2013 – 2018 Waterloo, Canada

- Dean's Honours List
- GPA: 89.6/100

PROGRAMMING

Proficient with **R**, **Python**, **Haskell**

Comfortable with **C**, **C++**, **Julia**

TOOLS

Proficient with **Linux**, **git**, **SQL**, **LaTeX**

Comfortable with **Open MPI**, **Hadoop**

AWARDS

NSERC Undergraduate Student Research Award
The Natural Sciences and Engineering Research Council of Canada, 2017

President's Research Award
University of Waterloo, 2017
University of Waterloo, 2016

David Johnston International Experience Award
University of Waterloo, 2017

INTERESTS

drumming snowboarding audiobooks award travel