#### padtai.ca

in linkedin.com/in/taicai

github.com/padtai

# — Tianyi (Tai) Cai —

Brookline MA

Canadian Citizen with H-1B

Updated 02/2019 ②

(857) 998-8619

## SUMMARY

PhD training Bayesian statistics (multilevel models, causal inference, model averaging, nonparametric theory)

Classical statistics (hypothesis testing, mixed models, regularization, asymptotic theory)

machine learning, ProjectEuler+

Frequently used Python, R, SQL, Jupyter Notebook, Amazon S3, Amazon EC2, LATEX

Occasionally used Tensorflow, Keras, Spark, Java, C++, HTML, CSS, Javascript

### EXPERIENCE

#### Data Scientist, BitSight

Boston MA 10/2017-Present

- · Oversee all data science requirements for third party risk management projects by collaborating with cross-functional teams
- · Partner with product, sales, and marketing managers to devise data-driven strategies from unorthodox data structures
- · Design studies to evaluate the association and causality of relationships pertaining to efficacy of products, impact of extraneous events, and influence of internal interventions
- · Program Python scripts and modules for data storage, collection, cleaning, analysis, and visualization
- · Lead reading groups covering advanced topics in forecasting methods, prediction intervals, and model evaluation metrics
- · Support data science team members in ad hoc statistical tasks

#### Data Science Fellow, Insight Data Science

Boston MA 05/2017-09/2017

- · Generated idea for predicting supply/demand at Hubway bike-sharing stations in Boston, despite a lack of labeled data
- · Consolidated and cleaned multiple data sources to tally labeled information for 200 bike stations over 11 million time points
- · Predicted real-time supply/demand for each bike station using various machine learning and statistical models
- · Created website to visualize directions and to predict bike availability for user input origins and destinations
- · Provided mentorship and feedback for subsequent cohorts of fellows

### PhD Student, Research Assistant, Harvard University

Cambridge MA 08/2012-09/2017

Waterloo ON

- · Conducted original statistical research on applied problems in mental disorders, health care policy, and end-of-life care
- · Developed R code for handling datasets with complexities such as sampling bias, misclassified outcomes, correlated outcomes, hierarchical structures, and confounding
- · Taught graduate-level labs with topics ranging from introductory statistics to seminar topics in Bayesian nonparametrics, decision theory, and sequential methods
- · Selected to tutor fellow PhD students for the biostatistics written qualifying exam

## Full-time Co-op Work Semesters, University of Waterloo

· Actuarial Analyst, Enterprise Risk Management Munich Re	Toronto ON	09/2011-12/2011
Actuarial Analyst, Biometric Research Munich Re	Toronto ON	01/2011-04/2011
Actuarial Analyst, Segregated Fund Valuation, Manulife	Waterloo ON	05/2010-08/2010
· Actuarial Analyst, Group Benefits Pricing, Manulife	Waterloo ON	09/2009-12/2009
· Pension Administrator, Hewitt Associates	Toronto ON	01/2009-04/2009
· Database Analyst, Logitech	Mississauga ON	05/2008-08/2008

#### **EDUCATION**

#### PhD, Biostatistics, Harvard University

Cambridge MA 2017

05/2008-12/2011

- · Thesis: Statistical Methods for the Analysis of Observational Data with Multiple Correlated Outcomes
- · Advisors: Tianxi Cai, Francesca Dominici

#### Bachelor of Mathematics, University of Waterloo

Waterloo ON 2012

· Honours Actuarial Science/Finance Option, Honours Statistics, Co-operative Program

#### Associate of the Society of Actuaries, Society of Actuaries

Schaumburg IL 2012