in linkedin.com/in/taicai github.com/caikitlearn

# - Tai Cai, PhD -

caikitlearn.github.io

Updated 01/2024 **C** 

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Canadian Citizen | US Permanent Resident

# SUMMARY

**Profile** · Quantitative scientist with 6.5 years (after PhD) of tech industry experience in leveraging applied statistics, machine learning, and software engineering to influence high-level decision-making

· Bayesian statistics (probabilistic programming, causal inference, hierarchical models, nonparametric methods) **Expertise** 

· Classical statistics (statistical learning, experimental design, mixed models, time series)

· Machine learning (tree-based models, deep learning, theory)

· Cross-functional collaboration to develop and productionize data-driven products and insights

**Toolkit** · Python, SQL, R, jupyter, Vim

# Experience

#### Data Scientist, Planner Evaluation

Waymo, New York, NY 11/2022-Present

- · Halved the family-wise error rate of experiments used to evaluate onboard software by successfully launching confidence interval adjustments in collaboration with front-end and back-end engineering teams
- Pioneered the use of statistical power and minimum detectable effect throughout the broader Planner Evaluation team by authoring the API and writing supporting documentation
- Provided statistical mentorship for teams across Waymo on topics such as resampling methods, type I/II error, and quantifying uncertainty; promoted better statistical fluency across Planner Evaluation by teaching a short course

# Research Data Scientist, Quantitative Engineering

Meta, New York, NY 02/2021-11/2022

- · Collaborated (with engineering, product, design, and UX research) as the scientific point of contact in a 100 person team to build, improve, and migrate users to infrastructure tools, doubling user engagement in the process
- Served as the technical lead for the data team through multiple product and feature launches by providing mentorship, planning, and stakeholder management
- · Guided engineers to optimize the design of experiments intended to reduce latency in Core Infra services, yielding more principled decision-making

#### Applied Scientist, Global Intelligence

Uber, San Francisco, CA 01/2020-02/2021

- · Estimated point and interval values of competitive intelligence metrics used in executive decision-making
- · Engineered an ensemble of machine learning models using internal and third-party data to identify rare user groups for multi-million dollar experiments; improved the legacy model by doubling the precision

## Data Scientist, Data and Research

BitSight, Boston, MA 10/2017-01/2020

- · Led all data science projects for third-party cybersecurity risk management, including BitSight's inaugural machine learningbased product, multiple analytical tools, and observational studies to evaluate internal processes
- · Supervised Master's-level intern working on validation of external financial data and sales/marketing analytics

#### **Technical Advisor**

Insight Data Science, Boston, MA 06/2019-09/2019

· Mentored data science projects for PhD graduates and postdoctoral fellows by providing weekly 1-on-1 feedback

# **EDUCATION**

## PhD, Biostatistics

Harvard University, Cambridge, MA 08/2012-09/2017

- · Conducted and published statistical research on applied problems in genetics, health care policy, and end-of-life care
- · Developed novel methods and R code for handling confounding, sampling bias, misclassified and/or correlated outcomes, intractable cross-validation, and hierarchical structures
- · Taught graduate-level classes in Bayesian statistics, statistical methods, and introductory statistics/epidemiology

#### **BMath, Statistics and Actuarial Science**

University of Waterloo, Waterloo, ON, Canada 09/2007-06/2012

- · René Descartes National Scholar; Graduated with Distinction Dean's Honours List (Highest Honours)
- · Associate of the Society of Actuaries designation completed 03/2012
- · Six work semesters at Logitech, Hewitt Associates, Manulife Financial, and Munich Re