

Tiffany Ding

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Education

University of California, Berkeley

Ph.D. Student, Statistics

Advisors: Michael I. Jordan and Ryan J. Tibshirani

Berkeley, CA

2021 – Present

Brown University

Master of Science, Computer Science

Advisor: Stephen Bach

Providence, RI

2020 – 2021

Brown University

Bachelor of Science, Applied Math

GPA: 4.0, magna cum laude

Providence, RI

2017 – 2021

Publications

- [1] **T. Ding**, A. N. Angelopoulos, S. Bates, M. I. Jordan, and R. J. Tibshirani. Class-conditional conformal prediction with many classes. *arXiv preprint arXiv:2306.09335*, 2023.
- [2] P. Yu, **T. Ding**, and S. H. Bach. Learning from multiple noisy partial labelers. *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2022.
- [3] **T. Ding***, S. Kumar*, and S. Shaw*. A seabird population model to evaluate plastic pollution policies. *The UMAP Journal of Undergraduate Mathematics and Its Applications*, 41(3), 2020.
- [4] **T. Ding** and E.S. Chen. Mining drugs and indications for suicide-related adverse events. In *AMIA Annual Symposium Proceedings*, volume 2019. American Medical Informatics Association, 2019.

*equal contribution

Experience

University of California, Berkeley

Graduate Student Researcher

Berkeley, CA

Aug 2021 – Present

- Ongoing research in uncertainty quantification (e.g., conformal prediction); learning in the presence of distribution shift; active feature acquisition; connections between game theory and machine learning.

Research.....

Brown University, Dept. of Computer Science

Master's Project

Advisor: Stephen Bach

Providence, RI

Mar 2020 – May 2021

- Designed method for performing weakly supervised machine learning in non-stationary environments by leveraging ideas from Bayesian changepoint detection.
- Implemented method using Python and Stan and performed evaluation on real and synthetic data sets.
- Developed a proof of generic identifiability for a generative model of multi-class labels from multiple labeling sources.

Brown University, Dept. of Applied Math*Honors Thesis***Providence, RI***Jan 2020 – May 2022*

Advisor: Charles (Chip) Lawrence

- Developed method that leverages Gaussian processes and state space models to infer historical sea levels using geological proxies.

Brown Center for Biomedical Informatics*Undergraduate Researcher***Providence, RI***Sep 2018 – Jan 2020*

Advisor: Elizabeth Chen

- Used Python to create predictive models for suicide risk and compared performance of various data oversampling techniques.
- Applied association rule learning to FDA data using Julia to discover drug-drug interactions that increase suicide risk.

Brown University, Dept. of Economics*Research Assistant***Providence, RI***Sep 2019 – Dec 2019*

Advisor: Emily Oster

- Summarized key findings of hundreds of scientific papers related to biology and public health.
- Performed preliminary steps of meta-analysis by calculating standardized mean difference using results of published studies.

Industry**Johns Hopkins University Applied Physics Laboratory***Machine Learning Research Intern***Remote***Summer 2020, Winter 2021*

- Adapted contrastive learning methods to object detection setting and developed prototype model by combining ideas from YOLOv4 (Bochkovskiy et al., 2020) and BYOL (Grill et al., 2020).
- Trained and applied calibration methods to improve estimates of object detector uncertainty.
- Designed algorithm to apply hierarchical classification methods to object tracking setting and improved accuracy by 13% compared to baseline methods.
- Collaborated with other interns to develop heuristic-based algorithm for device deduplication using WiFi access data.

Facebook, Inc.*Data Science Intern***Menlo Park, CA***Summer 2019*

- Conducted analyses on large datasets using SQL, Python, and Excel and created useful metrics and data visualizations.
- Effectively communicated findings through write-ups and presentations to team members and other interns.

Fellowships and Awards**NSF Graduate Research Fellowship***National Science Foundation**2022-Present***Jerome L. Stein Memorial Award for Undergraduate Excellence***Brown University, Dept. of Applied Math**May 2021***2nd Place, East Coast Regional Datathon***Citadel and Citadel Securities**Sep 2020*

- Awarded \$2,500 cash prize for identifying the optimal target audience for maximizing movie profitability.

Outstanding Paper, Interdisciplinary Contest for Modeling*Consortium for Mathematics and Its Applications**Feb 2020*

- One of 18 winners out of 7,000+ teams in international math modeling competition.

1st Place, Brown Math Contest for Modeling*Brown University, Dept. of Applied Math**Nov 2019***Rewriting the Code Fellow***Rewriting the Code**Jun 2018 – May 2021*

Teaching Experience

Graduate Student Instructor

University of California, Berkeley

- DATA 102: Data, Inference, and Decisions (Spring 2022)

Undergraduate Teaching Assistant

Brown University

- DATA 2080: Data and Society (Spring 2021)
- DATA 1050: Data Engineering (Fall 2019)
- CSCI 0040: Introduction to Scientific Computing and Problem Solving (Spring 2019)
- CSCI 0170: Computer Science: An Integrated Introduction (Fall 2018)

Outreach and Service

Finance and Sponsorship Chair

May 2023 – Present

ICML 2023 WiML Un-Workshop, Women in Machine Learning

Diversity Committee Vice Chair

Sep 2022 – Present

Statistics Graduate Student Association, University of California, Berkeley

- Organize community-building events for women in statistics, ranging from undergraduate students to professors.

Co-organizer

Sep 2022 – Present

Berkeley Statistics Fellowships Workshop, University of California, Berkeley

Reviewer

Jul 2022 – Present

Transactions on Machine Learning Research

Service Committee Member

Sep 2021 – Present

Statistics Graduate Student Association, University of California, Berkeley

Mentor

Nov 2021 – Dec 2022

Statistics Graduate-Undergraduate Program, University of California, Berkeley

Mentor

Sep 2022 – Oct 2022

NSF GRFP Workshop, Office of Graduate Diversity, University of California, Berkeley

Judge

Feb 2022

ENVISION Research Competition by WiSTEM

Undergraduate President

Jun 2020 – May 2021

Association of Women in Mathematics, Brown University

Mentor

Sep 2018 – May 2021

Women in Science and Engineering, Brown University

Mentor

Sep 2019 – May 2021

Women in Computer Science, Brown University

Mentor

Sep 2019 – May 2021

Matched Advising Program for Sophomores, Brown University

Mentor

Aug 2020 – May 2021

Rewriting the Code

Head Photo Editor

Jan 2019 – Dec 2019

Brown Daily Herald

Computer skills

Coding languages:

- Advanced: Python
- Intermediate: R, MATLAB, SQL, Julia
- Beginner: C, Scala, HTML/CSS, OCaml, Java

Additional Skills: TensorFlow 2.0, PyTorch, Git, bash, Stan, Tableau, Microsoft Excel, Adobe Photoshop, \LaTeX

Last updated July 2023