Ryan Theisen

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Education

University of California, Berkeley, Berkeley, CA
Ph.D. in Statistics, 2018-Present.

Arizona State University, Tempe, AZ
M.A. in Mathematics, 2017-2018. Thesis: Covergence Results for Two Models of Interaction, Advised by Sebastien Motsch
B.S. in Mathematics and Economics, 2013-2017. Phi Beta Kappa, Summa Cum Laude, Outstanding Graduate in both Mathematics and Economics

Experience

Graduate Student Researcher, University of California, Berkeley
Fall 2018-Present

- I work with Professor Michael Mahoney on theoretical machine learning problems. Recently, this has focused on studying statistical learning through the lens of statistical mechanics, though I also work on other problems related to optimization and high-dimensional statistics. I also collaborate closely with a number of post-doctoral students, as well as Professor Jason Klusowski at Princeton.

Deep Learning Research Intern, Salesforce Research, Palo Alto
Summer 2019, Summer 2020

- I worked with several Salesforce deep learning researchers on projects including obtaining improved norm-based generalization bounds for deep neural networks, and using normalizing flows to estimate the Bayes error of high-dimensional machine learning datasets.

Machine Learning Team Lead, Luminosity Lab, Arizona State University
Fall 2016-Spring 2018

- I worked with a team of top ASU graduate and undergraduate students on a wide variety of research problems, including developing a haptic guidance system for visually impaired individuals.

Senior Data Analyst, Amazon.com, Seattle/Phoenix
Summer 2016-Fall 2017

- I designed and implemented an algorithm to optimally staff remote, part-time customer service associates that decreased cost and greatly improved the ability to scale up or down the customer service network on short notice.

Papers

[1] Cao F., Motsch, S., Reamy, A., **Theisen, R**. *Asymptotic Flocking for the Three-Zone Model.* Mathematical Biosciences and Engineering (2020).

[2] **Theisen, R**., Klusowski, J., Mahoney, M. *Good linear classifiers are abundant in the interpolating regime.* ArXiv preprint 2006.12625 (2020).

[3] **Theisen, R.**, Klusowski, J., Wang, H., Keskar, N., Xiong, C., Socher, R. *Global Capacity Measures for Deep ReLU Networks via Path Sampling.* ArXiv preprint 1910.10245 (2019).

[4] Weber, D., **Theisen, R.**, Motsch, S. *Deterministic Versus Stochastic Consensus Dynamics on Graphs.* Journal of Statistical Physics (2019).

Teaching

University of California, Berkeley
Graduate Student Instructor, Stat 157: Deep Learning
Graduate Student Instructor, Stat 154: Modern Statistical Prediction and Machine Learning
Graduate Student Instructor, Stat 89A: Linear Algebra for Data Science

Arizona State University
Teaching Assistant, ECN 312: Intermediate Microeconomics
Teaching Assistant, ECN 212: Principles of Microeconomics

Service

Volunteer, Kino Border Initiative, Nogales, Mexico
2012-Present

- In high school, I founded a club that led student groups to the Kino Border Intitiative in Nogales, Mexico to work with recently-deported migrants. Since then, I have continued to be involved with the group, and recently have helped implement an improved data intake system for collecting demographic information on migrants, which we subsequently clean, store, and output into dashboards which are used by immigration researchers and advocates.

Awards and Honors

Dean's Medal, Mathematics, ASU, 2017 Awarded as outstanding graduating senior in School of Mathematical and Statistical Sciences.
Dean's Medal, Economics, ASU, 2017 Awarded as outstanding graduating senior in Department of Economics.
Moeur Award, ASU, 2017 Granted University-wide academic distinction at graduation.
J.P. Morgan Chase Scholar, ASU, 2016 Awarded prestigious fellowship for top economics undergraduates.
Fulbright Summer Scholarship, University of Bristol, UK, 2014 UK Summer Institute for Young American Student Leaders.

Skills and Interests

Programming: Python, R, Julia, SQL, LaTeX.
Languages: English, Spanish (elementary proficiency).
Research Interests: Theoretical Machine Learning, Deep Learning, Statistics, Optimization.
Personal Interests: Photography, Green Bay Packers, Arsenal FC, Rock Climbing, Hiking.