Amber Day

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EDUCATION

AS in Math	BS in Math	MS Math Ed		MA Math	PhD Statistics & Data Sciences

University of Texas at Austin — **August 2020 – present**
*Statistics and Data Sciences, PhD - **GPA - 3.98*** — *Austin, Texas*

The College at Brockport — **August 2018 – August 2020**
*Mathematics, MA - **GPA - 4.00*** — *Brockport, New York*

University of Rochester — **May 2016 – August 2017**
*Mathematics Education, MS - **GPA - 3.97*** — *Rochester, New York*

Texas State University — **January 2014 – May 2016**
*Mathematics, BS - **GPA - 4.00*** — *San Marcos, Texas*

Austin Community College — **January 2011 – December 2013**
*Mathematics, AS - **GPA - 3.66*** — *Austin, Texas*

RESEARCH INTERESTS

Statistics and Data Sciences
- Deep Learning, Time Series Analysis, Complex-Valued Neural Networks, Signal Denoising, Classification, Bayesian Optimization, Bayesian Active Learning, Bayesian Neural Networks, Applications in Physics

PUBLICATIONS

Natalie Klein, **Amber J. Day**, Harris Mason, Michael W. Malone, Sinead A. Williamson. Denoising Neural Networks for Nuclear Resonance Spectroscopy. *Submitting to CoDA 2023.*

PRESENTATIONS

Denoising Neural Networks for Nuclear Resonance Spectroscopy - Symposium on Data Science & Statistics, St. Louis, Missouri, May 2023

Detecting Synthetic Opioids with NQR Spectroscopy and Complex-Valued Signal Denoising - Los Alamos National Laboratory Student Symposium, August 2022

POSTER SESSIONS

Symposium on Data Science & Statistics - Denoising Neural Networks for Nuclear Resonance Spectroscopy, May 2023

Conference on Data Analysis - Denoising Neural Networks for Nuclear Resonance Spectroscopy, March 2023

WiML Workshop @ NeurIPS - Detecting Synthetic Opioids with NQR Spectroscopy and Complex-Valued Signal Denoising, November 2022

MAA Seaway Conference - Comparing Differences of Consecutive Prime Numbers, April 2019

SUNY Brockport Scholars Day - Comparing Differences of Consecutive Prime Numbers, April 2019

RESEARCH EXPERIENCE

Complex-Valued Signal Denoising and Bayesian Optimization for Detection of Synthetic Opioids with Natalie Klein (Los Alamos National Laboratory)
- *Current:* Working on developing/applying machine learning and statistical tools for signal detection and for denoising complex-valued time series data. Using Bayesian optimization to inform physics experiments. Running jobs on the Darwin cluster.

Deep Learning with Sinead Williamson (UT Austin)
- *Current:* Working on developing deep learning models for physics applications using PyTorch.
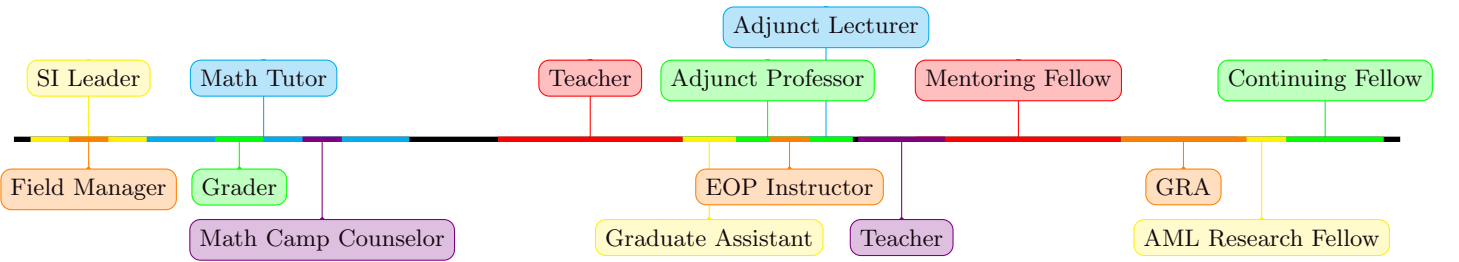
Bayesian Sparse Functional Graphical Models with Abhra Sarkar (UT Austin)
- Worked on developing an algorithm to estimate the edges in functional graphical models.

Genome-Wide Association Study (GWAS) with Arbel Harpak (UT Austin)
- GWAS of educational attainment. Ran jobs on Texas Advanced Computing Center (TACC).
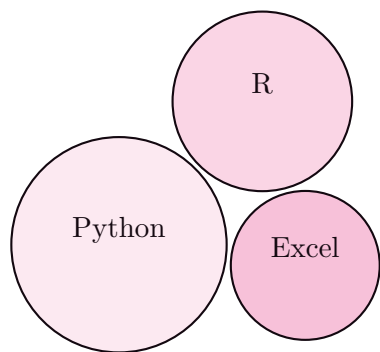
RELEVANT EXPERIENCE

University Graduate Continuing Fellow   **University of Texas at Austin**
August 2023 – August 2024   *Austin, TX*
- Conduct dissertation research.

Applied Machine Learning (AML) Summer Research Fellow   **Los Alamos National Laboratory**
May 2023 – August 2023   *Los Alamos, NM*
- Utilize Bayesian deep process convolutions to better understand the universe.

Graduate Research Assistant (GRA)   **Los Alamos National Laboratory**
May 2022 – Present   *Remote*
- Conduct machine learning research in the Statistical Sciences Group.

Dean's Mentoring Fellow   **University of Texas at Austin**
August 2020 – May 2022   *Austin, TX*
- Attend classes and explore research areas.

Teacher   **Rochester City School District**
February 2020 – August 2020   *Rochester, NY*
- Instruct high school students in algebra and geometry.

Adjunct Lecturer   **SUNY Brockport**
August 2019-January 2020   *Brockport, NY*
- Instruct students in business calculus.

Adjunct Professor   **Monroe Community College**
August 2018-January 2020   *Brighton, NY*
- Instruct students in developmental mathematics.

Graduate Assistant   **SUNY Brockport**
August 2018-January 2020   *Brockport, NY*
- Tutor Mathematics for the Living Learning Communities program.

Educational Opportunity Program (EOP) Instructor   **Monroe Community College**
Summer 2019   *Brighton, NY*
- Teach college survival skills to pre-freshman in summer bridge program.

Teacher   **Rochester City School District**
April 2017-August-2018   *Rochester, NY*
- Instruct 7th and 8th grade mathematics and science.

Camp Counselor   **Texas State University**
Summer 2015   *San Marcos, TX*
- Help campers to deepen their understanding of and love for mathematics.

Mathematics Tutor   **Austin Community College**
October 2013-December 2015   *Austin, TX*
- Tutor mathematics.

Grader   **Texas State University**
August 2014-December 2014   *San Marcos, TX*
- Grade differential equations assignments.

Supplemental Instruction Leader   **Austin Community College**
January 2013-December 2013   *Austin, TX*
- Organize and hold group study sessions for pre-algebra.

Field Manager   **Grassroots Campaigns**
Summer 2013   *Austin, TX*
- Recruit, train, and manage a team of activists.

AWARDS

UT Austin: University Graduate Continuing Fellowship – $35,000/year, tuition waiver & benefits – August 2023

Los Alamos National Lab: Applied Machine Learning Summer Research Fellowship – $16,000 – May 2023

UT Austin: Dean's Mentoring Fellowship – $34,000/year, tuition waiver & benefits – August 2020 & August 2021

UT Austin: Recruiting Bonus – $4,000 – August 2020

SUNY Brockport: Graduate Assistantship – $15,500 and tuition waiver – August 2018

University of Rochester: Warner School Scholarship – $53,000 – May 2016

Texas State University: Emmie Craddock Scholarship – $1,500 – April 2015

Texas State University: Ross and Sarah Wayment Endowed Scholarship – $1,500 – April 2015

Austin Community College: Austin Kiwanis Club Scholarship – $1,000 – August 2011

Austin Community College: Austin Rotary Club Scholarship – $1,200 – August 2011

TECHNICAL SKILLS

Statistics & Data Science

R

Python

Excel

Other Software & Tools

LaTeX

PowerPoint

Word