

AMBER DAY

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RESEARCH INTERESTS

Statistics and Data Sciences

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

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)

- Compared single nucleotide polymorphism (SNP) effect sizes on educational attainment. Learned the basics of running jobs on Texas Advanced Computing Center (TACC).

Prime Numbers with Gabriel Prajitura (SUNY Brockport)

- Compared differences of consecutive prime numbers.

PUBLICATIONS

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

PRESENTATIONS

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

POSTER SESSIONS

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

EDUCATION

University of Texas at Austin

Statistics and Data Sciences, PhD - GPA - 3.97

August 2020 – present

Austin, Texas

The College at Brockport

Mathematics, MA - GPA - 4.00

August 2018 – August 2020

Brockport, New York

University of Rochester

Mathematics Education, MS - GPA - 3.97

May 2016 – August 2017

Rochester, New York

Texas State University

Mathematics, BS - GPA - 4.00

January 2014 – May 2016

San Marcos, Texas

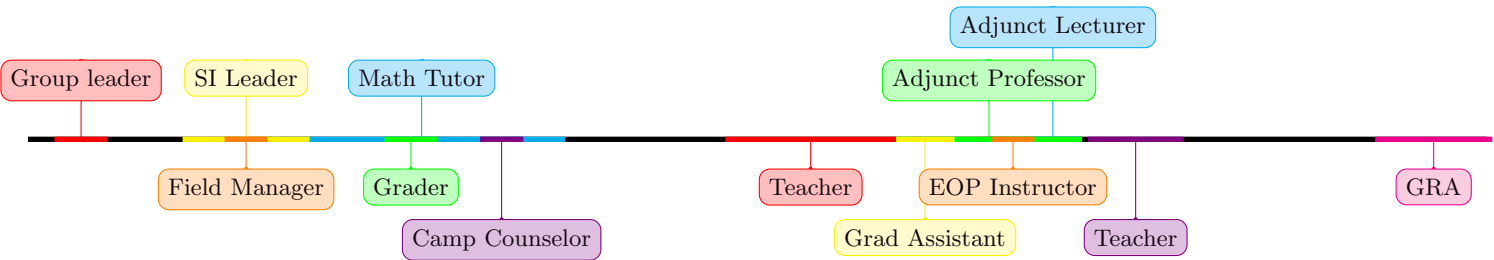
Austin Community College

Mathematics, AS - GPA - 3.66

January 2011 – December 2013

Austin, Texas

RELEVANT EXPERIENCE

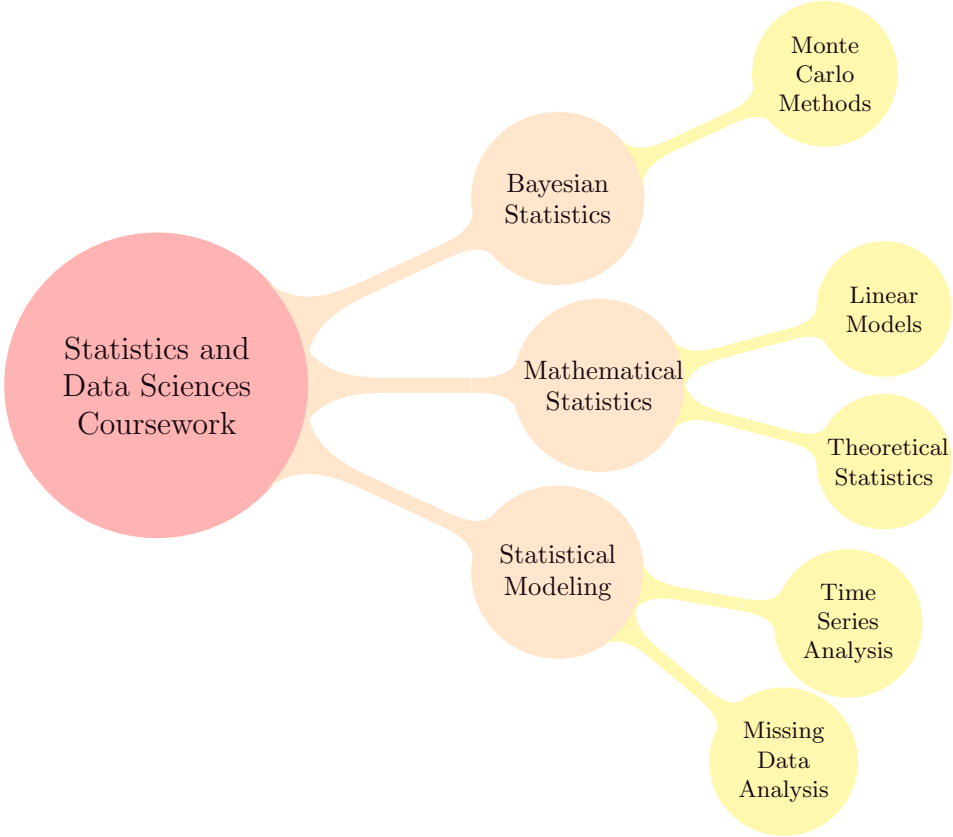


Graduate Research Assistant (GRA) <i>May 2022 – Present</i> <ul style="list-style-type: none">Conduct machine learning research in the Statistical Sciences Group.	Los Alamos National Laboratory <i>Remote</i>
Teacher <i>February 2020 – August 2020</i> <ul style="list-style-type: none">Instruct high school students in algebra and geometry.	Rochester City School District <i>Rochester, NY</i>
Adjunct Lecturer <i>August 2019-January 2020</i> <ul style="list-style-type: none">Instruct students in business calculus.	SUNY Brockport <i>Brockport, NY</i>
Adjunct Professor <i>August 2018-January 2020</i> <ul style="list-style-type: none">Instruct students in developmental mathematics.	Monroe Community College <i>Brighton, NY</i>
Graduate Assistant <i>August 2018-January 2020</i> <ul style="list-style-type: none">Tutor Mathematics for the Living Learning Communities program.	SUNY Brockport <i>Brockport, NY</i>
Educational Opportunity Program (EOP) Instructor <i>Summer 2019</i> <ul style="list-style-type: none">Teach college survival skills to pre-freshman in summer bridge program.	Monroe Community College <i>Brighton, NY</i>
Teacher <i>April 2017-August-2018</i> <ul style="list-style-type: none">Instruct 7th and 8th grade mathematics and science.	Rochester City School District <i>Rochester, NY</i>
Camp Counselor <i>Summer 2015</i> <ul style="list-style-type: none">Help campers to deepen their understanding of and love for mathematics.	Texas State University <i>San Marcos, TX</i>
Mathematics Tutor <i>October 2013-December 2015</i> <ul style="list-style-type: none">Tutor mathematics.	Austin Community College <i>Austin, TX</i>
Grader <i>August 2014-December 2014</i> <ul style="list-style-type: none">Grade differential equations assignments.	Texas State University <i>San Marcos, TX</i>
Supplemental Instruction Leader <i>January 2013-December 2013</i> <ul style="list-style-type: none">Organize and hold group study sessions for pre-algebra.	Austin Community College <i>Austin, TX</i>
Field Manager <i>Summer 2013</i> <ul style="list-style-type: none">Recruit, train, and manage a team of activists.	Grassroots Campaigns <i>Austin, TX</i>
Group Leader <i>January 2012-June 2012</i> <ul style="list-style-type: none">Supervise elementary students in after-school program.	Extend-A-Care <i>Austin, TX</i>

AWARDS

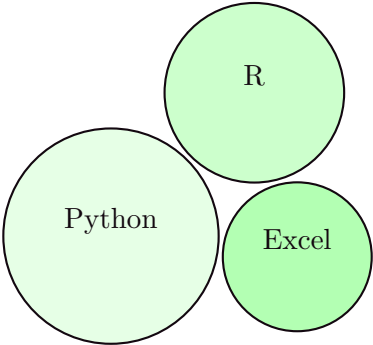
- UT Austin:** Dean’s Mentoring Fellowship – \$34,000, tuition waiver & benefits – August 2020 & August 2021
- UT Austin:** Recruiting Bonus – \$4,000 – August 2020
- SUNY Brockport:** Graduate Assistantship – \$15,500 – August 2018
- University of Rochester:** Warner School Scholarship – \$53,000 – 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

COURSEWORK



TECHNICAL SKILLS

Statistical & Data Science



Other Software & Tools

LaTeX	PowerPoint
	Word