

Austin Zane

☎ (512) 919-2990 | ✉ austin.zane@gmail.com

Education

University of California, Berkeley

PH.D. IN STATISTICS

Berkeley, CA

Incoming Aug. 2021

Texas A&M University

B.S., MAJORS IN STATISTICS, APPLIED MATH (WITH HONORS), MINOR IN COMPUTER SCIENCE

- Major GPA: 4.0, Overall GPA: 3.96

College Station, TX

Aug. 2017 - May 2021

Publications

Sun, S., Zane, A., Fulton, C., & Philipoom, J. *Statistical and Bioinformatic Analysis of Hemimethylation Patterns in Non-Small Cell Lung Cancer*. *BMC Cancer*, 21, 268 (2021). <https://doi.org/10.1186/s12885-021-07990-7>

Research Experience (funded)

Summer Program in Biostatistics at Harvard T.H. Chan S.P.H.

Harvard University

STUDENT RESEARCHER

Jun. 2020 - Jul. 2020

- Principal Investigator: Dr. Briana Stephenson
- Attended lectures in biostatistics, statistics, and A.I. delivered by Harvard faculty.
- Analyzed population data from the CDC's National Health and Nutrition Examination Survey.
- Highlighted cardiovascular disease risk factor disparities associated with race and socioeconomic variables.
- Worked with survey sample design (sample weights), data wrangling, regression analysis, and specialized R packages.
- Produced a report that can be used by future researchers and policymakers to provide the right recommendations for the right people.

Statistics Summer Undergraduate Research Experience

Texas A&M University

STUDENT RESEARCHER

Apr. 2020 - Nov. 2020

- Principal Investigator: Dr. Huiyan Sang
- Built and deployed a COVID-19 mobility dashboard using Shiny, R, and 300GB of cell phone location data from Safegraph Inc.
- Focused on spatiotemporal analysis and its association with sociodemographic variables.
- Collaborated with researchers from UT School of Public Health and Rice University to adapt the dashboard for Houston.
- Presented dashboard to TAMU COVID-19 task force and local government. Available from shinyapps.io.

NSF Research Experience for Undergraduates

Texas State University

TEAM LEAD

Jun. 2019 - Sep. 2020

- Principal Investigator: Dr. Shuying Sun
- Analyzed massive genetic datasets using R, Bash, then various statistical methods, including Wilcoxon signed-rank test.
- Wrote virtually all of the thousands of lines of code, conducted the statistical analysis, and wrote most of the manuscript.
- Resulted in a paper titled "Statistical and Bioinformatic Analysis of Hemimethylation Patterns in Non-Small Cell Lung Cancer" that has been accepted by BMC Cancer for publication

NSF Undergraduate Research

Texas A&M University

STUDENT RESEARCHER

Jan. 2019 - May. 2019

- Principal Investigator: Dr. Huiyan Sang
- Focused on the development of algorithms for analysis of spatiotemporal datasets.
- Tracked maritime vessels in a harbor using sparse location data.
- Gained data analysis and visualization skills in Python.

Projects

Statistics Capstone

Texas A&M University

STUDENT

Jan. 2020 - May 2020

- Principal Investigator: Dr. Huiyan Sang
- Analyzed traffic accidents in Dallas County and Travis County, TX, from 2016 to 2019.
- Cleaned and reduced the data to predict the number of accidents in a day given the weather, date, location, etc.
- Employed both zero-truncated negative binomial regression and random forest models.
- Gained experience with data reduction, model selection, and data visualization while providing insight into which factors play significant roles in Texas traffic accidents.

Independent Study in Machine Learning

Texas A&M University

STUDENT

Aug. 2019 - Dec. 2019

- Instructor: Dr. Boris Hanin
- Worked through *Pattern Recognition and Machine Learning* by Christopher Bishop.
- Explored how statistics and mathematics work together to form machine learning.
- Gained significant knowledge of machine learning methods and how to apply them in future projects.

Independent Study in Linear Algebra

Texas A&M University

STUDENT

Jun. 2018 - Aug. 2018

- Instructor: Dr. Boris Hanin
- Worked through *Finite-Dimensional Vector Spaces* by Paul Halmos.
- Enhanced my familiarity with theory of linear algebra beyond regular coursework.
- Learned to self-manage and work independently.

Honors & Awards

2020	G. Alan Cannon '88 Endowed Scholarship,	Dept. of Math.
2020	Melvin Hamilton '71 Memorial Endowed Scholarship,	College of Science
2019	Madhava Prize in Analysis Award, Top student in MATH 446: Honors Principals of Analysis	Dept. of Math.
2019	Classroom Excellence Award, Top student in MATH 409: Honors Advanced Calculus	Dept. of Math.
2017	National Hispanic Scholarship Award, Awarded every semester	Texas A&M
2017	Dean's Honor Roll, All eligible semesters	Texas A&M

Posters & Presentations

2020	Texas A&M Emergency Management Advisory Group, Mobility Dashboards	Texas A&M U.
2020	Statistics Undergraduate Project Showcase, Predicting Count of Accidents on a Given Day	Texas A&M U.
2020	Pipelines into Biostatistics 2019 Symposium, Harvard Cardiovascular Disease Research	Harvard U.
2019	American Society of Human Genetics 2019 Conference, REU Hemimethylation Research	Houston, TX
2019	Math Graduate Programs Expo, REU Hemimethylation Research	Texas State U.
2019	Statistics Undergraduate Research Poster Session, REU Hemimethylation Research	Texas A&M U.
2019	Summer Undergraduate Research Symposium, REU Hemimethylation Research	Texas State U.

Technical Skills

Proficient, R, C++, Rmarkdown, Shiny, tidyverse

Intermediate, Python, LaTeX, Unix

Familiar, SAS

Highlighted Coursework

MATHEMATICS

- **MATH 606: Theory of Probability,** graduate level probability, planned Spring 2021
- **MATH 607: Real Variables I (A),** graduate level real analysis
- **MATH 447: Principals of Analysis II (A),** honors
- **MATH 446: Principals of Analysis I (A),** honors
- **MATH 409: Intro to Real Analysis (A),** honors
- **MATH 423: Linear Algebra II,** proof-based, planned Spring 2021
- **MATH 323: Linear Algebra (A),** proof-based

STATISTICS

- **STAT 642: Methods of Statistics (A),** graduate level experimental design
- **STAT 611: Theory of Inference (A),** graduate level
- **STAT 414: Mathematical Statistics (A),** proof-based probability
- **STAT 436: Multivariate Analysis and Statistical Learning (A)**

COMPUTER SCIENCE

- **CSCE 313: Computer Systems,** planned Spring 2021
- **CSCE 312: Computer Organization (A)**
- **CSCE 221: Data Structures and Algorithms (A)**

Shiny dashboard link: https://azane8.shinyapps.io/poi_dashboard/?_ga=2.13648116.2108376341.1606692531-419099887.1605401555