

Chase Mathis

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EDUCATION

University of California, Berkeley

PhD Candidate in Statistics Department

Expected Spring 2030

Duke University

BS in Mathematical Statistics & Mathematics, Minor in Computer Science; GPA: 3.786

August 2021 - May 2025

- **Graduation with High Distinction in Statistics**
A New Method to Adjust for Ordinal Variables With a Pre-Diabetes Case Study
Advisor: Prof. Alexander Volfovsky & Prof. Robin Evans
- **Teaching Assistant**
COMPSCI 527: Computer Vision (Master's Level); STA 199: Introduction to Data Science
- **Awards**
Faculty Scholars Award Semi-Finalist, Early Honors Thesis Track

St. Catherine's College, Oxford University

Fall Term; Courses: Graphical Models & Statistical Genetics

October 2023 - December 2023

Deerfield Academy

Cum Laude

September 2017 - May 2021

RESEARCH

Deans' Summer Research Fellow

Research Lead

May 2024-

- Developing graphical conditions for biased causal inference estimators.
- Developing methods for ordinal confounders generated by latent normal random variables.
- Contributing to [\[Causl R Package\]](#) and [\[Survivl R Package\]](#) for survival models.
- Jointly supervised by Prof. Alexander Volfovsky and Prof. Robin Evans.

Duke University Statistics

Thesis Proposal Workshop

May 2024

- One of four rising seniors selected to begin thesis work.
- Spoke about my own research journey to junior students in the program.

Summer Institute in Biomedical Informatics, Harvard Medical School

Research Assistant in the CELEHS Lab

June 2023-

- Performed comprehensive research on the integration of joint embedding models (CLIP by OpenAI) to augment established statistical models.
- Jointly supervised by Prof. Tianxi Cai & Prof. Junwei Lu.
- Developed a radiology report LLM that outperforms LLM's on chest x-ray classifications such as MedFlamingo.
- Currently collaborating with Merck for automatic feature extraction using residual embeddings.

InSpire Lab

Research Assistant

October 2022 - December 2023

- Led quantitative analysis analyzing perceptions of various period tracking apps after *Roe Vs. Wade*.
- Used CLMM regression techniques to discover that many women are aware of privacy issues, but do not take action.
- Paper featured in [\[Duke Today newsletter\]](#).

WORK & VOLUNTEERING

Duke Field Hockey

Data Analyst

Fall 2022 - Fall 2023

- Collected, cleaned, and visualized unstructured game data in R/Python with NLP methods.
- Created reports that highlight the team's strengths, which are sent to the team, coaches, and boosters.

Prisoner Math Project & Duke Justice Project

Volunteer Teacher

Spring 2024 - Spring 2025

- Helped lead a group of undergraduates that organize events and foster connections between Duke and Durham incarcerated community.
- Volunteer for in-person GRE tutoring to male inmates on death row at Raleigh's Central Prison.
- Assist collaboration between Duke and StepUp Durham, a non-profit focused on re-entry.
- Exchange email correspondence with prisoners that are interested in learning mathematics, statistics, and economics.

PUBLICATIONS

- [1] Jiaxun Cao, Hiba Laabadli, Chase Mathis, Rebecca Stern, and Pardis Emami-Naeini. "“I Deleted It After the Overturn of Roe v. Wade”: Understanding Women's Privacy Concerns Toward Period-Tracking Apps in the Post Roe v. Wade Era". In: *Proceedings of the 2024 ACM Conference on Human Factors in Computing Systems*. 2024.
- [2] Xi Lin, Daniel de Vassimon Manela, Chase Mathis, Jens Magelund Tarp, and Robin J Evans. "Simulating Longitudinal Data from Marginal Structural Models". In: *arXiv preprint arXiv:2502.07991* (2025).