

# Chase Mathis

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## EDUCATION

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### Duke University

*BS in Mathematical Statistics & Computer Science, Minor in Math; GPA: 3.8*

*August 2021 - May 2025*

- **Courses**

Real Analysis, Statistical Inference, Data Structures & Algorithms, Statistical ML, Bayesian Statistics, Computer Vision

- **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

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### 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 [\[Causl R Package\]](#) for survival models.
- Jointly supervised by Prof. Alexander Volfovsky (Duke) and Prof. Robin Evans (Oxford).

### Duke University Statistics

*Thesis Proposal Workshop*

*May 2024*

- One of four rising seniors to be selected to begin our 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 [\[Duke Today newsletter\]](#).

### Google CS Research Mentorship

*Mentorship*

*February 2023 - May 2023*

- Acquired key skills for a focused research path in CS, including identifying opportunities, formulating questions, conducting literature reviews, and developing methodologies.

## WORK & VOLUNTEERING

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### 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

*Volunteer Teacher*

*Spring 2024 -*

- Exchange email correspondence with prisoners that are interested in learning mathematics, statistics, and economics

## PUBLICATIONS

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- [1] Jiaxun Cao, Hiba Laabadli, **Mathis, Chase**, 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.