Chase Mathis

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Faculty Reference: David Banks (dlbanks@duke.edu)

EDUCATION

Duke University — Durham, NC
Intended Bachelor's of Science in Statistics, Computer Science, Minor in Math; GPA: 3.92 — *August 2021 - May 2025*
- **Courses**:
  Data Structures and Algorithms, Machine Learning, Linear Algebra, Modern Bayesian

St. Catherine's College Oxford — Oxford, UK
Visiting Student for the Michaelmas Term — *Fall 2023*
- **Studies**:
  Statistical Inference and Mathematical Modeling

RESEARCH

InSpire Lab — Duke University
Mentor: Dr. Pardis Emami-Naeini — *Fall 2022 - Present*
- Reserach assistant in a CS Research Lab, focusing broadly on security and privacy
- Currently researching the public's opinion on decentralized social media sites

Predicting Particle Clusters — Duke University
Data Mining & Machine Learning — *Fall 2022*
- I developed multiple models to predict the first four central moments of a particle cluster
- These models can serve as a substitute for computationally inefficient numeric solvers
- Investigated the relationship between different parameters and their effect on how particles clustered together

Investigating Controllable Factors of Life Expectancy — Duke University
Data Mining & Machine Learning — *Fall 2022*
- Applied Statistical Models to analyze life expectancy and give advice to Health Policy experts
- Models included: Regularized Regression, Trees, and GAMs
- Thus analyzed sparse models, interaction terms, and nonlinear relationships

WORK EXPERIENCE

Duke Field Hockey — Durham, NC
Data Analyst — *Fall 2022 - Present*
- I wrangle messy historical game data with Python and R, then visualize insights using Tableau
- Use extensive data analysis to give Duke's team a competitive advantage by helping them better understand themselves and their opponents

Duke University Statistics Department — Durham, NC
Undergraduate TA — *Fall 2022 - Present*
- Instruct Introduction to Data Science labs and hold weekly office hours
- Guide students in their first R coding experience and foundational statistical practices

RESEARCH CONFERENCES & PROGRAMS

Google CS Research Mentorship — Virtual
Mentorship — *Spring 2023*
- Selected to a mentorship program regarding CS research

Tapia Conference — Washington D.C.
Diversity in Computing — *Fall 2022*
- Attended many talks hosted by diverse speakers regarding modern techniques in AI/ML

SKILLS SUMMARY

- **Languages**: Python, R, SQL, Java, C, Proficient in Mandarin
- **Libraries/Tools**: Pandas, NumPy, PyTorch, Tidyverse, Tidymodels, Keras, GIT, Matlab, Tableau, Regex