Jonathan Kerby-White

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EDUCATION

University of Wisconsin–Madison, College of Letters & Sciences, Madison, WI
Master of Science in Statistics and Data Science *Expected Graduation: May 2026*

Indiana University Bloomington, College of Arts and Sciences, Bloomington, IN
Bachelor of Science in Pure Mathematics *Graduated in May 2024*

EMPLOYMENT EXPERIENCE

Data Science Graduate Project Assistantship (PA) *September 2024 – Current*
World-class Instructional Design and Assessment (WIDA) Graduate PA through the UW – Madison Wisconsin Center for Education Research (WCER), Madison, WI

- Graduate project assistant for WIDA consortium specifically dealing with data involving English Learners that take the Access assessment in grades K - 12. I perform data analysis, including regression analysis, on large time-series data sets to advise government agencies, stakeholders, and other legislatures that create policies for English Learners in the United States.
- Large time-series data analysis in R, Stata, and Microsoft Excel.

Statistics Learning Center Graduate Tutor *January 2025 – Current*
Graduate tutor for Statistics at UW – Madison

- Graduate tutor for students enrolled in STAT 371: Introductory Statistics for the Life Sciences.

Information Technology (IT) Help Desk Technician *August 2024 – Current*
Library IT Help Desk Technician at UW – Madison

- IT specialist dealing with Windows, IOS, and Linux operating systems as well as Microsoft Office.

Graduate Teaching Assistantship (TA) *August 2024 – December 2024*
Graduate Teaching Assistant for Integral and Multivariate Calculus at UW – Madison

- Graduate teaching assistant for Calculus and Analytic Geometry 2 (MATH 222). Duties include organizing, preparing, and delivering content to students and proctoring and grading exams.

Undergraduate Instructor/Teaching Assistant, *August 2021 – May 2024*
Undergraduate Mathematics Instructor at Indiana University Bloomington & IU East (IUE)

- Undergraduate instructor for MATH-M 118, 106, 119, 120, 211, 212, 301, 303, and 311.

PAID RESEARCH AND INTERNSHIPS

Research Experience for Undergraduates (REU) *May 2023 – August 2023*
10-week REU at the University of Connecticut (UCONN)

- Presented my REU research *Laplacian Eigenmaps and Orthogonal Polynomials* at The Young Mathematicians Conference (YMC 2023) at The Ohio State University.

Summer Research Scholar (SUMRS) *May 2021 – September 2021*
SUMRS award recipient at Indiana University East, Richmond, IN

- Presented my research, *Methods to Evaluate Mathematical Propositions*, at the IUE student research day and published it in the IUE scholarly research journal.

PROJECTS

Machine Learning Marathon (MLM) *September – December 2024*
12-week hackathon with real-world ML projects on Kaggle at UW – Madison

- Performed regression analysis using Python to predict house prices on a high-dimensional dataset.

- Cleaned, transformed, and analyzed the data using the Python packages Pandas and PySpark.

Edge Detection and Image Smoothing *December 2024*

Edge Detection and Image Smoothing of .png file in R

- Wrote R code to take a .png file, detect its edges, and edit the file to change the color of the edges.
- Created a function that takes a .png file and smooths the file to the degree of the users choosing. Similar to what applications like FaceApp and Facetune use to edit a user's face.

Web Scraping in R *November 2024*

Exploratory Web Scraping in R

- Created code to scrape NFL data for exploratory data analysis
- Scraped IMDB Top 250 Movie List and used R to explore the data.

Various Games with Artificial Intelligence Opponent *October 2024*

Tic-Tac-Toe and Connect Four games with AI Opponent

- Created Tic-Tac-Toe and Connect Four games using R.
- Explicitly coded an unbeatable AI opponent for connect four.

Laplacian Eigenmaps and Orthogonal Polynomials *May 2023 – August 2023*

Research done during the 10-week REU at the University of Connecticut (UCONN)

- Analyzed the k = 1 case to determine that eigencoordinates are Chebyshev Polynomials.
    - Used Python packages such as NumPy and Matplotlib to better visualize the eigenmaps.
- Published *Convergence, optimization and stability of singular eigenmaps* in arxiv.org.

TECHNICAL SKILLS

(*Undergraduate, graduate, and professional level experience)***:**

Python (Pandas, NumPy, SciPy, Matplotlib, TensorFlow, PySpark), RStudio, HTML, CSS, SQL, SAS, Stata, Linux, Bash, IOS, Windows, API's, Web Scraping, Web Development, Machine Learning (ML), Artificial Intelligence (AI), Deep Learning, Git, GitHub, Conda, Google Colab, Statistical Inference, Regression Analysis, Data Science, Mathematical Analysis.