Emarie Rose De La Nuez

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EDUCATION

Tufts University, *M.S. in Applied Mathematics* — Medford, MA
Relevant Coursework: Numerical Analysis, Matrix Analysis, Non-Linear Optimization — *Sep. 2023 – May 2024*

Smith College, *Certificate in Mathematics* — Northampton, MA
Relevant Coursework: Probability, Advanced Calculus, Real Analysis, Data Ethnography — *Sep. 2021 – May 2022*

Oberlin College, *B.A. in Africana Studies, Minors in Economics and Mathematics* — Oberlin, OH
Relevant Coursework: Linear Optimization, Statistics — *Aug. 2017 – May 2021*

SKILLS

Technical: Python, Zsh, Matlab, SQL, R, STATA, and LaTeX.

Frameworks/Libraries: Pandas, NumPy, Scikit-Learn, Matplotlib, Beautiful Soup, Json, Pytest, Poetry, and NetworkX.

Spoken Languages: Spanish (Fluent), Italian (Intermediate), and Latin (Intermediate).

EXPERIENCE

Mapper Graphs for Voting Analysis — Medford, MA
Researcher at MGGG Redistricting Lab — *June 2023–Present*
- Utilized the open-source package KeplerMapper to conduct topological analysis on Chicago election data. This work is currently being workshopped for journal submission.
- Implemented various clustering algorithms, including K-means, DB-Scan, and X-means, to develop and refine techniques for dimension detection and feature selection.
- Designed and maintained a data pre-processing algorithm capable of handling datasets with up to 2.7 million records.
- Contributed to the open-source project VoteKit by resolving GitHub issues, developing unit tests, and updating documentation.

PFAS Exposure Risk in Carceral Facilities in Georgia — Northampton, MA
Data Analyst — *September 2021–June 2022*
- Utilized geospatial data analysis in R to identify contaminated watersheds that serve as sources of drinking water.
- Performed statistical analysis using the Tidyverse package, identifying 47 carceral facilities at risk.
- Presented findings to the Department of Justice, highlighting the environmental and medical racism implications of PFAS exposure.

Filling in the Color Line: Black-face Minstrelsy in the 19th and 21st Centuries — Oberlin, OH
Lead Researcher — *June 2019 – June 2021*
- Investigated U.S. socio-political perceptions of "whiteness" through gendered expressions of racial appropriation.
- Developed an original dataset using Twitter's API.
- Conducted a comprehensive literature review and implemented a filtered keyword structure using Python's Pandas library.
- Analyzed 500 manually assigned tweets using STATA and SPSS to detect potential spikes in racist tweets during the George Floyd Protests.

ACTIVITIES AND LEADERSHIP

Teaching Assistant; Linear Algebra, Calculus II and I, Probability, Introduction to Proofs — Medford, MA
Tufts University and Smith College — *Fall 2021–Present*
- Designed and implemented engaging assignments, leading weekly classes.
- Conducted personalized tutoring sessions totaling over 6 hours weekly, supporting three classes with 20-25 students each.
- Graded and provided feedback for student assignments.

Green EDGE Fund, Student Senate Liason — Oberlin, OH
Oberlin College — *September 2019 – May 2021*
- Represented Oberlin student body in institutional discussions of environmental sustainability.
- Coordinated weekly meetings with student representatives to allocate funds for environmentally sustainable projects.
- Worked with local businesses to review financial processes and provided accounting knowledge.

AWARDS AND SCHOLARSHIPS

Future Leaders Fellowship — Tufts University
One out of sixteen students nominated for a full-tuition scholarship — *Fall 2022 – Spring 2024*

Tisch Summer Fellowship — Tufts University
Secured funding for a full time position at the MGGG Redistricting Lab — *June 2023 – September 2023*

Mellon Mays Undergraduate Research Fellowship — Oberlin College
One out of five Oberlin students nominated for a national research grant — *Spring 2019 – Present*

Say Yes to Education National Scholarship — Oberlin College
Full-Tuition Scholarship — *Fall 2005 – Spring 2021*

Social Choice, and Electoral System Design

Race, Reform and Multiracial Democracy Convening, CHHIRJ @ Harvard Law School, February 2019

PFAS Exposure Risk in Carceral Facilities within the State of Georgia

Joint Mathematics Meeting, Seattle, WA, 2021

Filling in the Color Line: A Quantitative Look at Practices of white Hegemony

Mellon Mays Undergraduate Fellowship Regional Conference @ Oberlin and Grinell College, October 2019 and February 2020