

Sabrina Fowler

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EDUCATION

Doctor of Philosophy, Mathematics, *University of Nebraska-Lincoln*
Master of Science, Mathematics, *Missouri State University*
Bachelor of Science, Applied Mathematics, *Missouri State University*

expected December 2026
May 2021
December 2019

WORK EXPERIENCE

- Research Intern**, *Georgia Tech Research Institute* May 2024 - present
- Develop novel analytical methods for sponsored research programs as part of a cross-functional team
 - Process and analyze large-scale datasets including network traffic logs and biological sequence data
 - Design, train, and evaluate deep learning models for anomaly detection and classification
- Graduate Teaching Assistant**, *University of Nebraska-Lincoln* August 2021 - present
- Independently design and manage all deliverables for an upper-level proofs course, including curriculum, assessments, and evaluation criteria
 - Collaborated with department leadership to ensure quality and consistency across multiple course sections of a large-enrollment general education requirement course
 - Redesigned course workbook and assessment materials, integrating reference content with problem sets and creating aligned digital exercises

PROJECTS

- SAND: Sheaf Analysis of Network Data** GTRI
- Applied sheaf-theoretic methods to model and analyze network traffic structure, building a mathematical framework for identifying anomalous patterns indicative of cyber threats.
- Thesis Research (Ongoing)** UNL
- Investigate algebraic structures underlying neural networks to develop a mathematical framework for assessing the trustworthiness, robustness, and efficiency of deep learning models.

- ERA Mathematics Curriculum Development** UNL
- Distilled UNL's intermediate algebra and pre-calculus curricula into focused review tracks for the College of Engineering's inaugural readiness program for incoming students, and served as instructor for the pre-calculus cohort. Program continues to run annually.

SKILLS

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|-------------|---|
| Programming | Python (PyTorch, TensorFlow, scikit-learn, pandas, NumPy), C++, Perl, SQL |
| Tools | Git, HTML, L ^A T _E X |
| Mathematics | Macaulay2, Mathematica, MATLAB |