

# Tripp Dow

## Education

2021–2025 **BA Computer Science**, *University of Minnesota*, Minneapolis, MN  
Honors student. 3.8 GPA. Pursuing minors in mathematics and philosophy.

## Work Experience

Fall 2023–Present **Undergraduate Research Assistant**, *Minnesota NLP Group*, Minneapolis, MN  
• Creating tools for scientific communication using generative AI.

Summer 2023 **Software Engineering Intern**, *Emercent Technologies*, Rochester, MN  
• Developed a web server and GUI to interact with medical devices  
• Designed and trained a transformer model for spirometric calibration

Summer 2023 **Undergraduate Research Assistant**, *Michigan State University*, East Lansing, Michigan  
• Developed methods for author name disambiguation in large datasets of academic literature, including string-based approaches, a large-language model classifier, and a co-author network search.

Summer 2022 **Software Engineering Intern**, *Area 10 Labs*, Rochester, MN  
• Created a mobile application for digital spirometry, including calibration, storage, and Fourier analysis  
• Assisted in the fabrication and soldering of medical equipment  
• Created algorithms to model human respiration

## Skills

Programming Languages Python, C/C++, C#, Java

Software and Libraries Docker, Git, Flask, ngrok, HuggingFace, PyTorch, Pandas, Tensorflow

Other Bash, LaTeX, Digital Signal Processing, Soldering, Arduino, Medical Devices

## Projects

Ongoing **SciTok**, *Minnesota NLP Group*  
Currently leading a project to increase public access to academic research, using generative AI.

Summer 2023 **Calibration Transformer**, *Emercent Technologies*  
Created a transformer for spirometric calibration. The model architecture includes a custom loss algorithm, to account for the lack of ground-truth data during training.

Ongoing **Graphical Methods for Author Name Disambiguation**, *MSU DeepThought Initiative*  
As part of an NSF REU, I designed an author name disambiguation system using a random forest classifier. The system utilizes graphical information about the co-author network surrounding a given publication, achieving high accuracy (96%) with limited publication attributes.

## Awards and Honors

2021–2023 UMNTC Dean's List

2023 SEIU Cecilia Razook Essay Scholarship

## Professional Affiliations

Member, Society of Research Software Engineering