860 10th Ave SE, Apt 1, Minneapolis, MN
+1 (507) 535-9243
trippdow@gmail.com
prettytrippy

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

September 2023–Present **Research Assistant**, *Minnesota NLP Group*, Minneapolis, Minnesota
- Using pretrained models to generate text, speech, and video
- Creating a web application to summarize research papers

August 2023 **Software Engineering Intern**, *Emercent Technologies*, Rochester, Minnesota
- Implemented machine learning algorithms for spirometric calibration
- Created a web server and database schema for storing and retrieving medical device samples
- Contributed to a GUI for controlling spirometers over BlueTooth

May 2023–July 2023 **Research Assistant**, *Michigan State University*, East Lansing, Michigan
- Created author name disambiguation algorithms for use in astrophysics literature
- Wrote parallel code for use on supercomputers
- Used pandas to process, visualize, and manipulate large datasets

June 2022–August 2022 **Software Engineering Intern**, *Area 10 Labs*, Rochester, MN
- Designed a mobile application for medical spirometry, with a GUI and storage system
- Used mathematical and statistical methods to model respiratory data, process time-series signals, and calibrate clinical equipment

Skills

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

Tools PyTorch, HuggingFace, Git, LaTeX, Flask, Scikit Learn, MathNET, GNU GMP

Skills Machine Learning, Digital Signal Processing, Optimization and Parallelization, Web-Scraping, Advanced Mathematics

Projects

Ongoing **Paper Summarizer**, *Minnesota NLP Group*
Creating a pipeline to generate speech and video summaries of research publications, in order to make academic research more accessible to the public, and assist researchers.

Ongoing **Identifying Worldwide Astrophysicists from Scientific Literature**, *Michigan State University*
Using publication metadata from the NASA Astronomical Data System, I implemented algorithms for disambiguating author names in academic literature. My approach focuses on networks of coauthors, using graphical attributes to teach a custom-made classifier author reference similarity.

Summer 2022, 2023 **BreathMetrics**, *Emercent Technologies*
Currently, calibrating a spirometer is a time-consuming process, requiring a large amount of input data. In my role as a summer intern at Emercent Technologies, I developed and improved algorithms to make this process easier and more accurate. Approaches included various types of regression, Yeh weighted-averaging, and training a transformer model. I also created mobile and web applications to streamline this process, collect data, and interact with embedded systems.