# Matthew Drutis

madrutis@umich.edu | (248) 934-9474

## Education

**University of Michigan** **Ann Arbor, MI**
Major: Computer Science and Engineering, Minor: Spanish May 2025

- GPA: 3.71/4.00
- Course Highlights: Machine Learning, Computer Vision, Data Structures and Algorithms (C++), Web Systems, Computer Organization i*n Progress*, Mobile App Development *In Progress*
- Activities: Michigan Data Science Team, Sierra Club, Hellenic Student Association, Spanish Club

## Recent Experience

**Pennymac Financial Services** **Agoura Hills, CA**
Software Engineering Intern June 2024 - Present

- Developing scalable, serverless applications using AWS CDK in Typescript
- Set up React/Next.JS web applications for A/B testing using targeting with LaunchDarkly
- Participated in high and low level system design on an Agile scrum team

**Michigan Data Science Team** **Ann Arbor, MI**
Project Lead - Vision Transformer from Scratch August 2024 - Nov. 2024

- Led a 10-person team in developing a Vision Transformer from scratch using PyTorch, implementing advanced deep learning techniques
- Created engaging technical presentations on machine learning concepts and cloud deployment strategies

**University of Michigan - Department of Anthropology** **Ann Arbor, MI**
Assistant Researcher October 2021 - April 2022

- Translated and interpreted sixteenth and seventeenth-century Southern Peruvian texts to organize 200+ households into a database, and designed queries in Microsoft Access to study the extinct indigenous language Puquina

## Projects

**Giggle Meme Organizer** | Swift, SwiftUI, SwiftData, Python, Django, PostgreSQL, EC2, OpenAI
*Capstone Project*

- Developed an AI-powered meme categorization app with SwiftUI and Django, leveraging Agile methodologies to streamline backend development and feature implementation
- Built a scalable infrastructure using SwiftData, PostgreSQL, and EC2 to support an iOS app and iMessage extension with automated meme classification and organization

**Instagram Replica** | React, Python, Flask, SQLite, Jinja, HTML, AWS EC2
*Class Group Project*

- Developed and deployed an Instagram replica with client-side dynamic pages, with a Flask and SQLite backend with a React frontend to allow for multiple sessions, likes, posts, and comments

**Pix2Pix Vocals Isolation** | Python, Pytorch, Librosa
*Final Class Project*

- Implemented the Pix2Pix conditional Generative Adversarial Network (cGAN) with Pytorch in Python in order to isolate the vocals from a song (with drums, guitar, accompaniment)

## Skills and Qualifications

- Programming Languages*:* Python(pandas, numpy, pytorch), Typescript, C++, C, Swift, React, SQL
- Technologies: Node.js, SwiftUI, AWS, Git, Linux/WSL, MacOS, Microsoft Suite, Shell Scripting, Docker

## Awards

- University Honors, Dean's List 2021 - 2024
- Stellantis Student Achievement Award Recipient November 2022
- UROP Blue Ribbon Award for Research Presentation April 2022