

# TRIS S. BROOKE-CUNNINGHAM

trisbc@umich.edu | <https://www.linkedin.com/in/trisbc/>

## EDUCATION

University of Michigan, College of Engineering

Bachelor of Science in Computer Science

Minor in Digital Studies

December 2023

GPA: 3.4/4.0

Ann Arbor, MI

**Relevant Courses:** *Data Structures and Algorithms, Computer Architecture, Human-Centered Design, Cybersecurity, AI, Machine Learning, Web Systems, Database Design, Natural Language Processing, Human-Robot Systems*

## TECHNICAL SKILLS

**Languages:** C++, Python, JavaScript, Java, SQL, MongoDB, Oracle Database, MATLAB, C#

**Frameworks & Libraries:** ReactJS, NodeJS, Flask, NumPy, Pandas, Scikit-learn, Matplotlib, wxWidgets, PyQt

## PROJECTS

### CertPathway | *Capstone Project*

August 2023 – Present

- Designed the code management system for Certpathway's codebase, used gitflow to minimize merge conflicts, and created interfaces for the different modules that made up the project to ensure clean integration at key milestones.
- Set deadlines for the team and used Trello for team management to successfully meet technical goals ahead of deadlines while managing proportional workloads without overlapping with team members' other constraints.
- Implemented Google OAuth2.0 API for CertPathway using the Flask requests library, allowing users to quickly login with a Google account and offloading the responsibility of password management.
- Designed CertPathway's and matching algorithm using the natural language toolkit's wordnet corpus and a precomputed inverted index, leading to matching and loading times of under 150ms during runtime.

### NLP Helper Chatbot | *Course Project*

November 2023 – Present

- Created an interactive chatbot that can respond to the user queries with relevant textbook pages using Scikit-Learn's MLPClassifier, a PDF Parser, and wxWidgets.
- Developed a dataset to train our Neural Network Model by randomly recombining sentences from the course's textbook, resulting in a varied dataset that was 28,800 datums long, with 576 unique classes.
- Used cross validation to find an optimal set of hyperparameters to achieve a 95% testing accuracy during model runtime.

### Shopping Assistant / Recipe Tracker | *Personal Project*

December 2023 – Present

- Created an application to make the process of meal-planning and grocery shopping easier by allowing easy selection of recipes that automatically compile into completed lists of the required groceries, including cost estimates.
- Developed a GUI interface using PyQt to integrate with Python, allowing easy user-interaction with the recipe system.

### Digital Studies – VR Experiences Curriculum Research

July 2023 – September 2023

- Researched VR experiences for Curriculum development for courses taught by Dr. Sara Blair, Vice Provost of Faculty Affairs.
- Performed User Experience research into a wide swath of VR titles to determine which would fit well with the course that Dr. Blair was intending to teach, focusing mostly on VR's ability to provide novel experiences and embody empathy in users.

## PROFESSIONAL EXPERIENCE

### Digital Studies Institute, University of Michigan

August 2022 – December 2023

*Technical Coordinator & Programming Assistant*

Ann Arbor, MI

- Created technical documentation computers, consoles, VR technology, 360° conference equipment, and multimedia displays in the office and organized those resources for ease of deployment, allowing immediate use for faculty and staff.
- Communicated technical needs between faculty, teaching staff and administration to ensure tech purchases could be made that were effective for staff while still being within the set budget.
- Planned, organized, and ran undergraduate programming to encourage community engagement with the department.
- Coordinated with student organizations and other internal departments to help fund events, promote programming, and make co-programming possible, leading to increased exposure for all involved.
- Trained new staff on event planning & technical documentation procedures, setting up a framework for position continuity.

### Michigan Union, University of Michigan

March 2022 – August 2023

*Building Manager*

Ann Arbor, MI

- Ensured nearly a dozen events ran smoothly by regularly checking in on clients, being available by phone, keeping track of the timelines of the various building events, and solving any problems that came up by passing them to relevant departments.
- Managed and resolved technical issues concerning computers and audio/visual systems to support clients' event needs.
- Used stand-up meetings and written plans to set tasks for staff, was available for questions both in person and on the radio.

## LEADERSHIP EXPERIENCE

### Digital Studies Institute Advisory Board

*Undergraduate Representative*

Ann Arbor, MI

January 2023 – Present

### Blavin Scholars Advisory Board

*Alumni Representative*

Ann Arbor, MI

September 2023 – Present