

# Ethan C. Morgan

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## EDUCATION

### University of Michigan, Ann Arbor, MI

Bachelor of Science in Computer Science - GPA: N/A COVID

Dec. 2022

- Coursework: Web Development, Computer Networks, Computer Security, Computer Organization

### Michigan Technological University, Houghton, MI

Bachelor of Science in Computer Science - GPA: 3.86

Sept. 2018 - Dec. 2019

- Coursework: Data Structures and Algorithms, Discrete Structures, International Economics, Linear Algebra

## PROJECT EXPERIENCE

### Ask485 Search Engine - Python, Flask

May 2021

- Built a scalable search engine in Python utilizing PageRank and TF-IDF concepts
- Designed HTML search interface to display search query results from REST API Python backend running on Flask
- Utilized MapReduce to efficiently parse and index over 30 MB of Wikipedia pages
- Implemented a REST API to handle user search queries using Flask

### MapReduce Server - Python

Apr. 2021

- Developed a MapReduce server in Python which executes user-submitted MapReduce jobs with multi-server capability
- Implemented multi-server functionality using multi-threaded TCP and UDP sockets for master-worker communication
- Added fault tolerance functionality to create program resiliency in case a worker dies

### Desktop Instagram Clone - Python, React JS, JavaScript, SQLite, Flask

Feb. - Mar. 2021

- Designed and wrote REST API backend using Python and Flask to pull data from SQLite Database for page content
- Protected stored passwords utilizing K-anonymity and SALT encryption
- Enhanced user experience by creating infinity scrolling, likes, browser history, and commenting features in React JS

### Piazza Post Categorizer - C++

May 2020

- Developed a supervised machine learning algorithm in C++ to classify categories for Piazza posts based on past posts

### Neural Network Optical Character Recognition (OCR) - Java

Jun. 2018

- Created a neural network Java application that trained itself to identify handwritten numeric numbers
- Implemented ability to train itself on pictures of handwritten numbers or in a real time drawing interface

## EXPERIENCE

### Ford Motor Company, Dearborn MI

Global Data, Analytics, and Insights (GDI&A) Summer Intern working in The Democratization Team

Jun. - Aug. 2020

- Decreased server wait times by 18% by designing and implementing a Schedule Optimizer to recommend the best times for new workflows
- Decreased overall server workflow errors by 11% by creating a program to notify developers of real-time server crashes on their workflows
- Increased overall server utilization by 9% by implementing workflow to notify server managers and developers when wait times were too long
- Collaborated with Alteryx and Server team on scalability of the Schedule Optimizer, for code efficiency across servers

### Software Engineering Intern contracted by Ciber Global

May - Jul. 2019

- Automated 100+ hours of human resources by automating the patching and updating of over 700+ plant floor computers by writing PowerShell scripts
- Created detailed inventory reports for 9 Manufacturing Plants by implementing Powershell scripts to collect computer configurations
- Coordinated with Plant Management for best times to update 24/7 production lines in 9 different plants

## SKILLS AND INTERESTS

**Computer Languages:** Java (advanced), C++ (adv.), Python (adv.), C (intermediate), Swift (novice), SQL (nov.), JS (nov.)

**Platforms:** Windows, Linux/Unix, OS X

**Applications:** Tableau, Alteryx, Qlikview, Github, AWS