

# Elijah Cantu

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## EDUCATION

### University of Michigan College of Engineering

Ann Arbor, MI

Sep 2021 - May 2025

- **Bachelor of Science in Engineering (BSE):** Computer Science
- **Minor:** User Experience Design
- **Awards:** Full ride including Detroit Promise and Wolverine Pathways tuition scholarships
- **Courses:** Web Systems, Database Management Systems, (Web Design, Development, and Accessibility), Software Engineering, Building Data-Driven Web Applications, Human Centered Software Design and Development, User Interface Development

## SKILLS

**Programming, Scripting, Markup Languages:** C++, C#, C, Python, SQL, JavaScript, HTML, CSS, Shell, Assembly

**Web Frameworks:** AWS, Cloudflare, React, Node, npm, npx, webpack, NGINX, Flask, Django, jQuery, Cypress

**Other:** G++, GCC, GDB, Clang, LLDB, pdb, pytest, eslint, venv, pip, Homebrew, Make

**PROJECTS** (For a complete list of 40+ projects, visit [linkedin.com/in/elijahcantu/details/projects](https://www.linkedin.com/in/elijahcantu/details/projects))

### [restrictdevices.com](https://restrictdevices.com)

- Developed a website with free device restricting tutorials for individuals, spouses, children, friends, and families.

### Wikipedia Search Engine

- Developed a scalable search engine for Wikipedia pages crawled from technology related seed pages.
- Built an inverted index using a pipeline of MapReduce programs using the Hadoop Streaming Interface.
- Created a REST APP index server app that returns search results based on TF-IDF and PageRank weight.
- Implemented a search server as a user interface implemented with server-side dynamic pages.
- Designed a Flask view for the index route using threads to make REST API requests to each index server.

### MapReduce Server

- Developed a robust single machine, multi-process, multi-threaded server that executes user-submitted MapReduce jobs in Python and deployed it on a cluster of AWS EC2 instances.
- Integrated multithreading for executing user and manager submitted jobs and tasks, managed message passing via TCP ports for communication between users, managers, and workers, handled heartbeats using UDP ports between managers and workers, and ensured fault tolerance.
- Implemented map and reduce stages including partitioning input by the manager for map tasks, execution of map executables by workers, partitioning and sorting of executable outputs, creation of reducer tasks by the manager, and merging of input files by workers using a heap queue.

## EXPERIENCE

### Adient Plymouth CTU Technical Center

Plymouth, MI

- **Honda Department:** Product Engineer Intern
- **RECARO Department:** Business Analyst Intern

Aug 2019 - Mar 2020

Aug 2018 - Jul 2019

### Jewish Vocational Service

Detroit, MI

- Direct Support Professional

Oct 2017 - Jun 2018

## EXTRACURRICULAR

### FIRST Robotics Competition: Team 5557 - Kinematic Wolves

Detroit, Michigan

Team Captain, Lead Mechanical Engineer, and Mechanical Engineer

Sep 2017 - Jun 2021