ASHTON THOMAS
COMPUTER SCIENTIST, PROGRAMMER

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Profile

I'm a senior in Computer Science Engineering at the University of Michigan – Ann Arbor. I am on track to complete my Bachelor's degree by December 2024, however, I am pursuing a Master's degree by December 2025. I am distinguished among other candidates because of my diverse background which encompasses not only computer science, but also geography. My primary interest lies in applying data structures and algorithms to geographic applications, and I envision combining these two fields in my future endeavors. Nevertheless, I am currently exploring various facets within Computer Science to gain a well-rounded understanding of software development since learning holistically is essential for my growth as a software engineer.

Education

University of Michigan - Ann Arbor, MI
Major, Bachelors in Computer Science CSE — **3.8 GPA**
Expected Graduation Date: December 2024

Northwestern Michigan College - Traverse City, MI Major, Associates in Liberal Arts — **3.96 GPA** Graduated: May 2022

CEA Capa - Prague, Czech Republic
Study Abroad, Engineering — **4.0 GPA**
Spring 2023

Skills

Web Design
Building websites with Javascript, CSS, and HTML with responsive design. Many of these projects can be found under my projects page on my resume website. Feel free to visit my personal website at aethom00.github.io

Coding & Algorithms
Proven ability to write algorithms in C++, Python, and in mathematical proofs to accomplish a variety of tasks. An example project being a full Euchre game simulator. Many of these projects can be found under my projects page on my website.

Geography
I've got an exceptional skill in geography, as I have extensive knowledge on different countries and have the ability to identify them at first glance. I'd love to use these skills in mapping and aspire to work at a digital mapping company someday.

Programming Skills

C/C++	Matlab	Latex	Git
HTML	Python	Keras	SQL
CSS	Javascript	Julia	Assembly

Experience

MHackers — 2022-present
Software Engineer

Worked with a large group of other Software Engineers using Git (version control), Python, HTML, Javascript, and CSS to develop websites and Machine Learning applications.

Madi Taylor Photo — 2021-present
Web Developer

Worked at MadiTaylorPhoto to develop the company website using HTML, CSS, and Javascript to make a seamless responsive design on the website. My other duties were involving photoshoot setups and taking advertisement photos.

Notable Projects

Euchre Simulator - Using inheritance and polymorphism, I created a simulator of the famed Michigan card game Euchre which is customizable in the number of players vs the number of computers that can play against you.

Image Resizer - Used a seam carving algorithm to resize any PNG photo, it works by calculating which pixels are the least important to the photo and deleting them and then outputting the final product.

Web Post Sorter - Used machine learning and binary search trees to accurately sort online web posts by topic.

Office Hours API - An Office Hours queue supporting GET, POST, and DELETE requests for the UMich OH website.

3-D Puzzle Solver - By using stacks (dfs) or queues (bfs) with map and list outputs, I created a 3-D puzzle solver.

Bank Simulator - Uses hash-maps and priority queues to efficiently process bank transactions.

MST & TSP Calculator - Created efficient algorithms to solve the popular MST and TSP problems.

Machine Code Generator - Created an assembler which generates machine code from assembly instructions.

Assembly Linker - Created a linker which takes in many object files and combines them into one executable.

Pipeline Simulator - Simulates the process of a pipelined processor in the C programming language.

Cache Simulator - Simulates direct-mapped, full associative, and set-associative caches using the write-back policy.

Geoguessr AI - Given a panorama from an API I used Keras to create a trained model that is able to accurately predict the location with an average of 90% probability.

Notable Coursework

Discrete Mathematics

Data Structures and Algorithms

Computer Organization

Foundations of Computer Science

Computer Vision (Enrolled)

Cryptography

Web Systems (Enrolled)

User Interface Development (Enrolled)

Data Analytics Tools and Techniques

Computerized Linear Algebra

Web Design, Development, and Accessibility

Awards

UMich EV & Mobility Scholar, Riopelle/Dowden Technical Scholar, Robert Paul Dost Scholar, Ernest B. Isaacsen Scholar, Presidential Education Award Scholar, AP Scholar, National Honors Society Scholar, Guy M. Wilson Scholar