Ashton E. Thomas

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Education

University of Michigan - Rackham Graduate School — Ann Arbor, MI
Major - MSE Computer Science — *01/2025 - 05/2026*

University of Michigan College of Engineering — Ann Arbor, MI
Major - BSE Computer Science, GPA - 3.8 / 4.0 — *08/2022 - 05/2025*
Relevant coursework: Data Structures & Algorithms, Web Development, Computer Vision, Cryptography, Web Systems, Data Analytics, Quantum Computing, Computer Organization

Experience

Amazon, Boston, MA — 09/2024 - Present
Software Development Engineer Intern

- Collaborated with 20 engineers to develop, test, and enhance Alexas, improving functionality and user experience.
- Independently designed new Alexa device features, enhancing performance using APL and React Native.

Ground Vehicle Systems Center (SEC), Warren, MI — 05/2024 - 08/2024
Software Engineer Intern

- Leveraged MagicDraw & Excel to design databases for Jira tickets and hardware, leading to improved efficiency.
- Created Python scripts to parse large csvs with 1000s of datapoints to update integrated networks in Jira.

Madi Taylor Photo, Traverse City, MI — 06/2021 - 07/2024
Full Stack Developer Intern

- Developed and maintained the corporate website, crafting a cohesive user interface with HTML, CSS, and JS.
- Implemented robust back-end payment solutions and form validation to streamline user transactions.

Research

University of Michigan Polk Lab, Ann Arbor, MI — 09/2024 - Present
Computational Neuroscience Research Assistant

- Utilized FS-FAST and Makefiles to process fMRI data, contributing to the analysis of age-related neural dedifferentiation and its impact on neurocognition in healthy aging and Alzheimer's disease.
- Utilized data analytics techniques to analyze brain data, employing tools such as MATLAB and Python.

Projects

Geoguessr AI, Computer Vision, Ann Arbor, MI — 02/2024 - 05/2024

- Crafted a modified ResNet-50 architecture that accurately identifies U.S. geographic locations from images, overcoming lighting and seasonal variations. Through fine-tuning with a dataset of 61,000 images and innovative custom layers and a unique Haversine distance-based loss function, we achieved accuracy of roughly 90%.

Google Search Engine, Web Systems, Ann Arbor, MI — 03/2024 - 04/2024

- Engineered a scalable search engine similar to Google. Our approach utilized a segmented inverted index implemented through MapReduce programs, a REST API for search results, tf-idf for text analysis, PageRank for link analysis, and a user interface to interact with the engine.

Instagram Clone, Web Systems, Ann Arbor, MI — 01/2024 - 03/2024

- Constructed an Instagram Clone in three stages: a static site using HTML, Python, and CSS; a server-side dynamic site embedded with SQL relational databases, Flask, enabling features like user logins, content management, and interactions; and a client-side dynamic version with JavaScript, REST APIs, and React for seamless content updates without reloads, introducing infinite scroll and double-tap to like functionality.

Study Group Coordinator, Quantum Computing, Ann Arbor, MI — 02/2024 - 03/2024

- Developed a Study Group Scheduler using Grover's algorithm and quantum counting to efficiently form study groups under specific CNF constraints. I created a Bitflip Oracle and a Phase Oracle to transform CNF constraints into quantum operations, implemented Grover's algorithm for solution optimization, and engineered a quantum counting circuit to estimate feasible solutions.

Clubs

Michigan Data Science Team, MHackers

Technical Skills

AJAX, ARM, ARCGIS, C/C++, CSS, Excel, Flask, Git, HTML, Javascript, Jinja, Jira, JSON, Keras, Kotlin, Latex, MagicDraw, Makefile, Matlab, NumPy, Python, PyTorch, Qiskit, React/Native, SQL, Typescript, VBA, VSCode