

# Haytham Tang

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## Education

### University of Michigan, College of Engineering

*Bachelor of Science in Computer Science Engineering, Minor in Electrical Engineering*

GPA: 4.0

College of Engineering Peer Mentor

Relevant Coursework: Machine Learning, Data Structures & Algorithms, Computer Organization

**Ann Arbor, MI**

*Expected: April 2025*

### Ranney School

*Valedictorian*

American Mathematics Competition 12 Honor Roll Qualifier (National Top 2.5%)

USA Computing Olympiad Gold Qualifier, American Computer Science League Finalist 2021 & 2022

**Tinton Falls, NJ**

June 2022

## Skills

**Languages:** C++, Java, Python, HTML, CSS, JavaScript, TypeScript

**Frameworks:** React, React Native, Ionic

**Libraries:** OpenCV, Numpy, Scipy, Scikit-Learn, Matplotlib

**Cloud Tools:** AWS Lambda, API Gateway, Firebase Cloud Messaging, Auth0

## Experience

### University of Michigan - School of Information, [App Store/Google Play](#)

*Software Engineering Intern - Educational Technology Collective Lab*

**Ann Arbor, MI**

May 2023 - Aug. 2023

- Developed a cross-platform mobile app using Ionic React that supports over 150 master-level data science students' long-term retention through spaced repetition by interacting with automated flashcards through gestures
- Researched and simulated with 132 evaluation sets to model a spaced-repetition algorithm that calculates the personalized review period for learners to maintain a 90% knowledge retention based on *Super-Memo 2* algorithm
- Improved the query time of cards by 72% by implementing a MongoDB View, optimizing 6 API Gateway routes and Lambda function costs by 120%. Deployed Firebase Cloud Messaging that enabled daily push notifications

### University of Michigan - Electrical Engineering & Computer Science

*Research Assistant - Symbiotic Lab*

**Ann Arbor, MI**

May 2023 - Present

- Research the design of a multi-tier Quality of Service(QoS) memory system that can satisfy applications with different priorities with fast memory access and high throughput
- Deploy Cloudlab node to run Graph Algorithm Platform Benchmark Suite and Machine Learning models with varying local DRAM to measure the performance of the multi-tier system for 10-20 different applications
- Contribute to writing concurrent programs that improved measuring the latency and bandwidth load by 45%

## Projects

### Michigan Robotics Submarine Team

*Software Team Member*

**Ann Arbor, MI**

Sep. 2022 - Present

- Engineer 75% of movement and action mechanisms with 3 transition maps for competition to improve the runtime efficiency of the submarine control system by more than 20%. Team ranked 10th in the competition
- Calibrate ZED Camera and utilized OpenCV to capture 25 depth-mask videos and photos with different distances to our target, later applying Machine Learning models with training images for detecting targets

### Warehouse Robot, [Github Repo](#)

*Team Coordinator, UI Application Developer*

**Ann Arbor, MI**

Jan. 2023 - May 2023

- Led a team to build a Robot prototype capable of picking, palletizing, and transporting objects in a warehouse with 2 Arduino boards, a 40x40 gantry system, and a grabber
- Designed a User-Interface application using Processing software that allows users to click 5x5 grids of positions to activate the automated functioning of the robot with three different modes: retrieve, fetch, and reallocation

### Unit Converter, [Link](#)

*Web Application Developer*

**Tinton Falls, NJ**

June 2021 - Aug. 2021

- Created a web application that converts between units, real-time currency, and time zone using React with 6 flag, currency, and time APIs to elevate the application experience by 55% through synchronizing real-time flag displays, multi-currency conversions, and precise timekeeping
- Utilized React's useMemo for efficient data calculation, enhancing real-time currency conversion performance