

Hans Vador

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EDUCATION

The University Of Michigan

May 2029

Bachelor of Engineering in Mechanical Engineering and Computer Engineering

GPA 4.0/4.0

Courses: Programming and Data Structures, Electrical Circuits, Discrete Math, Linear Algebra, Calculus IV

WORK EXPERIENCE

Buckeye Vertical - *Structural Engineer*

December 2024 – August 2025

- Engineered and integrated an autonomous drone system achieving 6th place worldwide at the SUAS competition, specializing in payload delivery and real-time object detection
- Utilized SolidWorks and Onshape to create drone components and optimize battery location for ideal center of mass
- Manufactured various drone parts using 3d-printing including fabricating a fiberglass hood
- Developed and deployed YOLO-based computer vision models on a Jetson Nano to identify and track ground targets with 85% accuracy in real-time flight conditions
- Programmed autonomous flight behaviors using ROS2 for mission planning, path optimization, and object interaction across dynamic course environments
- Configured and tuned Pixhawk flight controller parameters via QGroundControl to synchronize payload motors and optimize propeller thrust profiles

Being Digital - *Photographer*

September 2022 – Present

- Capture, edit, and produce high-quality photography and videography for over 50 client projects.
- Created multiple promotional videos for various clubs and organizations including Buckeye Vertical
- Leveraged professional media to develop marketing which elevated brand visibility
- Design and deliver media albums tailored to client specifications.

PROJECTS

Robotic Arm | *Arduino R4 Wifi, IDE, YOLO, C++, SolidWorks*

September 2025 – Present

- Constructing a robotic system capable of completing various fine motor objectives autonomously from simple user prompts
- Employing SolidWorks to create parts, including the arm, the elbow joint, and the fingers
- Currently developing a backend system using IDE within an Arduino UNO R4 to automate robotic arm controls
- Building a tendon system using servos to control individual fingers to hold items and complete fine motor control objectives
- Implementing a YOLO object detection architecture to categorize and localize objects using a camera input

Volume Control | *Arduino R4 Wifi, IDE, React, SolidWorks*

July 2025 – September 2025

- Created and implemented an IoT-based speaker control system for remote volume adjustment
- Programmed an Arduino UNO R4 Wifi using IDE to act as the backend of the system, which receives HTTP requests and translates to accurate servo movements
- Built a front end React App for a smooth user interface which could send HTTP requests from any browser
- Modeled and manufactured custom components in SolidWorks, consistently refining designs for durability and efficiency
- Iterated through multiple hardware designs, evolving from dual toy-drone motors with clamps to a servo-powered, 3D-printed friction mount for reliable and repeatable speaker volume adjustment

TECHNICAL SKILLS

Languages: C/C++, Java, Python, Javascript, React.JS

Engineering Tools: CAD, SolidWorks, Onshape, QGroundControl, 3d Printing