Ethan Justice

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Education

University of Michigan **Sep. 2023 – May 2027**
Bachelor of Science in Computer Science, Minor Data Science Ann Arbor, MI

Relevant Coursework

- Data Structures and Algorithms
- Computer Organization
- Statistical Computing
- Computer Vision
- Foundations of Computer Science
- Applied Statistical Methods II
- Natural Language Processing
- Human Robot Interaction
- Computational Linear Algebra

Experience

United Wholesale Mortgage **May 2024 – Aug. 2024**
Software Engineer Intern Pontiac, MI
- Built a backend application that supported CRUD operations against a database of 50,000+ entries.
- Constructed a Full Stack application in Salesforce with a user base of over 750+ team leads company wide.
- Designed Zephyr Manual Testing and Apex Unit Testing procedures to reach 100% code coverage as QA.
- Built the application with JavaScript, HTML, CSS and Lightning Web Components to enable an intuitive UI/UX.

Interactive Sensing and Computing Lab **Sep. 2024 – Dec. 2024**
Research Assistant Ann Arbor, MI
- Created an embedded system with an Orange Pi, to use machine learning algorithms to identify user activity levels.
- Leveraged the Llama 3 model to identify user routines and activity levels, developing code in python.
- Optimized performance through multithreading and routing time sensitive tasks through high performance CPU cores.

Hartland Robotics **Jun. 2019 – Jun. 2023**
Control Systems Lead Hartland, MI
- Led a team of 8 engineers to develop a robot control system in C++ using GitHub for version control.
- Utilized State Machines to automate robot procedures and multi-threading to isolate distinct robot elements.
- Wrote element detection computer vision software using a Raspberry Pi to enable autonomously pathing to an object.
- Designed a custom PCB to connect all hardware components within the computer vision module.
- Developed robot localization software within an embedded system leveraging an optical flow sensor, IMU, a microcontroller communicating over I2C and USB Serial, reducing positional error by 20x when driving autonomously.
- Built motion profiling software, using an absolute encoder, to increase accuracy and speed of motor positioning by 200% while reducing peak current draw.

Projects

Ribbet - MHacks | MongoDB, Express.js, React Native, Node.js **Oct. 2024**
- Designed a cross-platform social media app using the MERN stack, enabling users to post and make bets on daily life.
- Leveraged MongoDB collections to store user and post data, using a node.js backend to perform CRUD operations.

Inner Voice AI - Stemist Hacks Hackathon Winner | OpenAI API, SQL, Google Firebase, Python, Flask **Jul. 2024**
- Built a conversational AI therapist levereging Hume AI for sentiment analysis and ChatGPT powered text generation.
- Created firebase database to store information about past conversations and user login details to allow memory of past conversations to be unique to each user.

The Situation Room - Cal Hacks | Google Gemini, Hume AI, Python, C#, Unity **Oct. 2024**
- Developed an interactive computer game in Unity with C# where players engage in de-escalation of a hostile character, using AI sentiment analysis, and content analysis to score the player.
- Created a local server using Python to manage the back end operations and to integrate the AI APIs with Unity.

Skills

Languages: C++, C, Python, Java, JavaScript, Node.js, Apex
Computer Science Fundamentals: Object-Oriented Design, Algorithms, Data Structures, Complexity Analysis
Databases And Cloud SQL, SOQL, SQLite, NoSQL Google Firebase, MongoDB, Salesforce, Relational Databases
AI & ML OpenAI, LLama 3, Google Gemini, PyTorch, Scikit-Learn, Numpy, Pandas, Natural Language Processing, Senitment Analysis, Computer Vision
Embedded Systems & Hardware: ROS 2, Raspberry PI, Arduino, CAN, I2C, USB Serial, VMWare, Fusion 360, Cura
Front End Development React Native, React.js, HTML/CSS, Lightning Web Components, Flutter, Flask
DevOps: Github, Git, Copado, Bitbucket, Jira