Ayan Nair

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EDUCATION

University of Michigan   Ann Arbor, MI
Bachelor of Engineering in Computer Science and Robotics   *Expected May 2026*

Honors/Awards: *Dean's List, University of Michigan Regents Merit Scholarship*

GPA: *3.81/4.00*

Relevant Coursework: *Operating Systems (Spring 2025), Computer Organization, Data Structures and Algorithms*

EXPERIENCE

Embedded Systems Engineering Intern   July 2024 – Aug 2024
DeepCharge Inc.   *Boston, MA*
- Contributed to the development of hardware and software features of AI-driven wireless charging product
- Implemented cooling system and primary camera-server communication system using Flask and Embedded C
- Generated SQL database of over 1,500 images to train and fine-tune OCR model for tracking charging percentages
- Presented product and its capabilities to a Fortune 500 company and other potential stakeholders.

Undergraduate Research Assistant   Nov 2021 – Aug 2023
Michigan State University   *East Lansing, MI*
- Developed a machine learning model to predict the location of atoms from the backbone of mutated proteins under professor supervision
- Normalized molecular vector data and implemented PyTorch for designing machine learning framework
- Performed with a minimum accuracy of 95% across all atom types in classification

Instructional Aide   Mar 2023 - Aug 2023
Mathnasium   *Okemos, MI*
- Provided personalized math instruction to students of various ages and skill levels
- Designed and implemented tailored learning plans to address individual learning needs and goals
- Monitored student progress and provided ongoing feedback to ensure comprehension and academic growth

PROJECTS

AlbumAce | *Python, Flask, React, BERT, MongoDB*   July 2024 – Present
- Developed a platform allowing users to rate music albums to democratize music reviews.
- Implemented sentiment analysis using BERT models on over 2,000 YouTube album reviews
- Built a Flask backend to fetch and transcribe YouTube reviews with Whisper and the YouTube Data API
- Designed and deployed a React frontend to display sentiment scores and leveraged MongoDB to store user ratings

visuAIize | *Python, Gemini API, OpenCV, Toga GUI*   April 2024 – April 2024
- Developed a software with Google's Gemini API to serve as an aide for the visually impaired
- Designed frontend and backend with Toga GUI to capture real-time footage and integration with Gemini API
- Utilized OpenCV and Threading libraries to parallelize uploading captured footage and retrieving LLM response

COVID-19 Chest X-ray Predictor | *Python, TensorFlow, Keras, PIL, SciPy*   Nov 2020 – May 2021
- Derived a convolutional neural network model from ResNet50 to predict COVID-19 diagnosis from chest X-rays
- Employed TensorFlow and Keras frameworks to construct a 10-layer model
- Attained an impressive accuracy of 98.3% with a minimal false positive rate of 0.82%
- Presented findings at the International Science and Engineering Fair (ISEF)

SKILLS

Languages: Python, C++, JavaScript, Java, Embedded C, Verilog

Frameworks: Flask, Node.js, Express.js, React.js, TensorFlow, MySQL, MongoDB

Technical Skills: Machine Learning, Full-Stack Development, Embedded Systems Programming, Product Management