Ayan Nair

517-515-1850 | ayannair@umich.edu | linkedin.com/in/ayan-nair/ | ayannair.com

EDUCATION

University of Michigan   Ann Arbor, MI
Bachelor of Engineering in Computer Science, Minor in Electrical Engineering   *May 2027*

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

Relevant Coursework: *Data Structures and Algorithms, Computer Organization, Web Systems, Logic Design, Computer Security, Foundations of Computer Science*

EXPERIENCE

Product and Ecosystem Intern   May 2025 – Present
Astera Labs   *Santa Clara, CA*
- Incoming Summer 2025

Project Manager   Jan 2025 - May 2025
Kappa Theta Pi Professional Technology Fraternity   *Ann Arbor, MI*
- Led a team of peers to develop and deploy an RTL-based Pong game using SystemVerilog, achieving **95%** completion on time with over **100** active users
- Oversaw the maintenance and enhancement of the official Kappa Theta Pi website, attracting over **250 unique users** per semester and increasing overall engagement
- Coordinated team efforts to ensure on-time delivery of project milestones and maintained efficient collaboration

Software Engineering Intern   May 2024 – Aug 2024
DeepCharge Inc.   *Boston, MA*
- Spearheaded development of hardware and software features of AI-driven wireless charging product
- Devised primary cooling system and camera-server communication framework using Flask and Embedded C, resulting in an **82% improvement** in charger performance
- 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   May 2023 – 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 over **10,000** molecular datasets and implemented PyTorch for designing machine learning framework
- Performed with a minimum accuracy of **95%** across all atom types in classification

PROJECTS

AlbumAce | *Python, Flask, React, BERT, MongoDB*
- Developed a platform allowing over **500 users** to rate music albums to democratize music reviews.
- Performed sentiment analysis using BERT models on **over 2,500** YouTube album reviews
- Built Flask backend to fetch and transcribe YouTube reviews with Whisper and the YouTube Data API, reducing manual transcription time by **70%**
- Designed and deployed a React frontend to display sentiment scores and leveraged MongoDB to store user ratings

Scalable Search Engine | *Python, MapReduce, Flask, SQL, BeautifulSoup*
- Built a scalable search engine indexing 50,000+ Wikipedia articles using a MapReduce pipeline to generate tf-idf and PageRank–weighted inverted indexes
- Developed a Flask REST API and web frontend to serve ranked search results with adjustable PageRank weighting
- Parsed HTML with BeautifulSoup to extract metadata and populate a SQL database of 50,000+ documents

visuAIize | *Python, Gemini API, OpenCV, Toga GUI*
- Constructed a software with Google's Gemini API to serve as an aide for visually impaired persons
- Assembled 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 responses, improving processing speed by **40%**.

SKILLS

Languages: Python, C++, JavaScript, Java, C, Verilog, HTML, CSS

Frameworks: Flask, Django, Node.js, React.js, Next.js, TensorFlow, PyTorch, Hadoop

Technologies: AWS, Google Cloud, MongoDB, PostgreSQL, ModelSim, Docker, Git

Interests: Violin, Tabla, Music Production, Table Tennis, Soccer Analytics