

# Ayan Nair

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## Education

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### University of Michigan, College of Engineering

Bachelor of Science/Engineering in Electrical Engineering

Ann Arbor, MI

Expected May 2027

- GPA: 3.84/4.0
- Relevant Coursework: Discrete Mathematics, Programming and Introductory Data Structures, Accelerated Introduction to Computers and Programming, General Physics, Introduction to Engineering, Linear Algebra, Multivariable Calculus, Differential Equations
- Clubs: MProduct, Wolverine Sports Analytics, Michigan Pops Orchestra

### Okemos High School

Okemos, MI

May 2023

- GPA: 4.0/4.0
- Awards/Honors: Valedictorian, National Honors Society

## Academic Projects

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Aug. 2023 - Dec. 2023

- Created a C++ program that modeled decay of radioactive parent Fluorine-18 nuclei into child nuclides using concepts of encapsulation and polymorphism.
- Designed a C++ program to calculate the payload that can be carried by a rocket to a low Earth orbit using finite difference methods and Euler schemes.
- Developed a MATLAB program that analyzes MRI images to detect brain tumors and provide dosage plans. Mimicked radiation therapy using matrix mapping
- Modeled a three-dimensional dam and calculated the maximum power generated for given efficiency, mass, flow rate and height map data using MATLAB

## Personal Projects

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### Michigan State University

Assistant Researcher

Sept. 2021 - May 2022

- Assisted on a research project that developed a Python machine learning model to predict the location of atoms from the backbone of mutated proteins - with implications in cancer and genetic disorders
- Collected image data, extracted features, and developed machine learning architecture.

### International Science and Engineering Fair

Competitor

Nov. 2020 - May 2021

- Developed a Python machine learning model to detect COVID-19 from chest x-rays as a low-cost alternative for underserved regions with a 98.3% accuracy. Won International Science and Engineering Fair (ISEF) finalist qualification

## Leadership Experience

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### Mathnasium of Okemos

Instructor

Mar. 2023 - Aug. 2023

- Tutored K-12 students in math
- Taught students math concepts and helped develop mathematical problem solving skills

### American Red Cross

Team Coordinator

Dec. 2021 - May 2022

- Recruited peers to advocate for International Humanitarian Law (IHL) and protection of historical sites during armed conflict
- Created awareness campaign by recording educational videos and holding multiple presentations

## Additional

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- **Programming Languages:** Python, Java, C++, MATLAB
  - **Technical Skills:** Data analysis, Mathematics, Project management, Creativity, Problem solving