Aariv Mody

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EDUCATION

Cornell University, College of Engineering, Ithaca, NY **Expected May 2027**
Bachelor of Science in Electrical and Computer Engineering, **GPA: 4.20**

Completed Courses
Circuits, Signals and Systems, Electromagnetic Fields & Waves, Machine Learning, Digital Logic & Computer Organization, Object-Oriented Programming & Data Structures

In-Progress Courses
Embedded Systems, Data Science, Microelectronics, Digital Communications Design, Photonics

TECHNICAL EXPERIENCE

Cornell Electric Vehicle Project Team, *Cornell University, Ithaca, NY*
Electrical Sub-team Member **November 2024 - Present**

- Collaborate with ~70 members to build a hyper-efficient electric vehicle for the Shell Eco Marathon competition
- Developing a Battery Management System (BMS) PCB for the team's first custom 48V lithium-ion battery pack, implementing state-of-charge estimation, fault isolation for extreme current/voltage/temperature conditions, and active cell balancing to extend battery life and reduce energy loss
- Implemented a custom Joulemeter PCB to measure battery energy output and efficiency, using an RP2040 microcontroller with I^2C communication, power converters, and analog-to-digital converters
- Executed the full PCB design lifecycle, including component selection, schematic capture and layout in Altium Designer, soldering, firmware development, testing, vehicle integration, and team design reviews

Cornell University, *Ithaca, NY*
Teaching Assistant for Introduction to Circuits for Electrical Engineers **August 2025 - December 2025**

- Led weekly laboratory sessions, assisting students with circuit design and hands-on use of electrical test equipment, including oscilloscopes, signal generators, DMMs, SMUs, and DC power supplies
- Collaborated with multiple TAs to present course content in recitations and author homework solutions
- Provided academic support for 140 students through office hours and grading assignments and exams

Laboratory for Laser Energetics (LLE), *University of Rochester, Rochester, NY*
Undergraduate Intern & Researcher **May 2025 - August 2025**

- Operated a novel additive manufacturing system that uses laser fusion of silica powder to fabricate glass samples, enabling the creation of optical materials unattainable through existing techniques
- Enhanced C# GUI by implementing 3D motion patterns, automating stage movement previously done manually
- Conducted microscopy on glass samples to analyze properties such as porosity, reflectivity, and transparency
- Prepared and presented a poster at the Inertial Fusion Energy (IFE-SURE) symposium in Washington DC

Mathnasium at Pittsford-Brighton, *Rochester, NY*
Math Instructor and Tutor **August 2021 - August 2024**

- Provided one-on-one in-person math instruction to students ranging from 1st to 12th grade up to calculus
- Documented learning plans and coordinated session schedules for small groups of students

Science Olympiad, *Pittsford Sutherland HS, Rochester, NY*
State Team Member **October 2022 – April 2024**

- Built a mass detector using a piezoelectric force sensitive resistor, voltage divider, ADC, and a Raspberry Pi microcontroller to display the mass of an object on a screen, placing 1st in the regional competition
- Self-studied the content for the optics event, placing 1st in regionals and 3rd in the state competition

TECHNICAL SKILLS

C++, Java, Python, C#, MATLAB, Verilog, Altium Designer, LTSpice, Microsoft 365 Suite, Mathematical Modeling