

# SOPHIA FRANKLIN

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## EDUCATION

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Cornell University, *College of Engineering*, Ithaca, NY

Expected Graduation: May 2024

- Electrical and Computer Engineering
- GPA: 3.56/4.00, *Deans List*
- *Relevant Courses: Digital Logic & Computer Org., Circuits, Java & Data Structures, Data Science, Systems & Signals, EM Fields & Waves, Intelligent Physical Systems, Quantum Computing, Embedded Systems, Integrated Sensors & Actuators*

## PROFESSIONAL WORK EXPERIENCE

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**Power Electronics Engineering Intern**, Tesla  
Manufacturing Test Team [*Palo Alto, CA*]

May-August 2023

- Led electrical engineering design of end-of-line manufacturing and validation for energy product.
- Handled schematic design and layout, part selection, and prototyping. Presented findings to stakeholders and reviewers.

**Robotics Software SLAM Engineering Intern**, iRobot Corporation  
iRobot R&D SLAM Team [*Bedford, MA*]

May-August 2022

- Developed SLAM-specific simulator environment pipeline with ROS-based software (C++, Python), and improved post-test performance evaluation pipeline for optimized processing and analysis.
- Worked with SLAM theory, pose estimation + path-planning technology, and sensor fusion for real-world device integration and development in industry robotics.

**Research Intern**, Marine Robotics Group

June-August 2021

MIT Computer Science & Artificial Intelligence Lab [*Cambridge, MA*]

- Configured full system architecture and multi-sensor set-up for a ROS-based robot swarm to support SLAM algorithm testing and analysis.
- Designed the robot network with data collection and visualization pipelines for implementing various algorithms to test pre-designed trajectory planning. Programmed data conversion, post-processing abilities for resulting sparse information datasets.

**Research Intern**, Marine Robotics Group

June-August 2020

MIT Computer Science & Artificial Intelligence Lab [*Cambridge, MA*]

- Designed, built, and programmed a ROS-enabled, Ubuntu-based robot that supports network-connected robot swarms.
- Handled SolidWorks CAD layout, engineering design, part selection (LiDAR, RGB-Depth cameras, smart actuators, computing), and electrical and software architecture.

## EXTRACURRICULAR ACTIVITIES

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**Researcher - Collective Embodied Intelligence Lab**

August 2023-Present

- Developing smart robotic matter devices inc. software, experimentation, and physics simulations for the Smarticle Project.
- Supports lab research on entanglement in nature to produce sophisticated global and algorithmic behaviors in robotics.

**Cornell Racing Formula SAE – Electrical Team Member**

November 2020-Present

- Work with team of over fifty college engineers to design, manufacture, and compete with electric race car in international electric FSAE competition.
- Led full systems (HV + LV) power harness design, manufacturing, and testing. Design, bring-up, and test custom PCBs.

## AWARDS & CERTIFICATIONS

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**CAM/CAD Certifications**

December 2020

- Autodesk Electrical, Altium Designer, SolidWorks, Autodesk Inventor Professional.

**Undergraduate Research Award - Intel Mindshare Program**

September 2023

- Research grant for the Fall 2023 semester, supporting student research in the College of Engineering. Funding for work on smart robotic matter with the CEILab under Professor Kirstin Petersen.

**Engineering Dean's List**

May 2021

- Made Dean's List for Fall 2020, Spring 2021, Fall 2021 semesters.

## SPECIALIZED SKILLS

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**Languages:** English, French (Proficient).

**Interests:** Robotics, space, tennis, running.

**Programming Languages:** Python, Java, C++, Verilog, shell script.

**Skills:** ROS, Linux systems, SLAM, wire harnessing, precision machining (mill, lathe, planer, miter saw), Git, Office Suite.