# Sameer Iyengar

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## EDUCATION

**Bachelor of Science, Systems Engineering and Design** Aug 2022 - May 2026
**with focus in Robotics and Autonomous Systems, Minor in Art & Design**
*University of Illinois at Urbana-Champaign, Champaign, IL*
Relevant Coursework: Intro to Electronics, Calculus I-III, Intro Differential Equations, Physics: Mechanics, Physics: Electricity & Magnetism, Mechanics: Statics, Mechanics: Dynamics, Mechanics: Intro to Solid Mechanics

## EXPERIENCE

**AUVSL, University of Illinois at Urbana-Champaign** *Champaign, IL* Aug 2023 - Present
*Undergraduate Research Assistant (Independent Study)*

- Assisted researchers at AUVSL (Autonomous and Unmanned Vehicle Systems Lab) with creating a sensor fusion algorithm in ROS2 for path planning and localization (SLAM) on an offroad vehicle by combining LiDAR and stereo camera data inputs.
- Developed a mathematical model for autonomous terrain-dependent tire inflation and deflation algorithms for a skid-steer vehicle using the Pacejka tire model (Magic Formula) with MATLAB and Simulink.

**Monolithic Systems Lab, University of Illinois at Urbana-Champaign** *Champaign, IL* Jun 2023 - Dec 2023
*Undergraduate Research Assistant*

- Worked on the RobInHighTs (Robots In High Tunnels) project with the Center for Digital Agriculture at the Monolithic Systems Lab, under the direction of Dr. Girish Krishnan.
- Developed the Valens on Wheels platform, an autonomous robotic manipulator with a soft arm end effector on an autonomous mobile base. Skills used include ROS1 (Python and C++), circuit design (EAGLE), and circuit assembly.

**Small Grains, University of Illinois at Urbana-Champaign** *Champaign, IL* Aug 2022 - May 2023
*Research Intern*

- Assisted professors of the Agricultural, Consumer, and Environmental Sciences (ACES) College with research to accelerate overall efficiency of the crop breeding process.
- Bred and treated variants of wheat and oats to show increased yield.

**Gardeneur** *San Jose, CA* May 2021 - Aug 2022
*Engineering Intern*

- Designed and released the GrowBin, a Wi-Fi capable, Arduino-based hydroponics tray that sustains plants.
- Developed a frontend interface with React Mobile which uses Amazon SageMaker to identify plant species, based off of user-uploaded images.

## SKILLS

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|---|---|
| *Programming Languages & Software* | • C++, Python, R, ROS1, ROS2, MATLAB, Simulink, Docker, Git<br>• Express.js, Node.js, React, Angular, MongoDB, Ruby, Ruby on Rails |
| *Robotics* | • Design, assembly, and testing of autonomous and embedded hardware systems.<br>• Experience with Arduino, Raspberry Pi, sensors and controls. |
| *Design & Fabrication* | • Blender, Fusion 360, Autodesk EAGLE, PCBWay<br>• 3D Printing with PLA, PETG, TPU |

## AWARDS

**IEOM 2nd Place International High School STEM Competition** *2021* Industrial Eng. & Op. Management Society
Internationally recognized for a research paper on our innovation, Croptimize, a robot with the goal of increasing crop yields by finding crops that can be planted on a given plot of land.

**PRIDEHacks 2023 First Overall** *2023* Major League Hacking
Recognized for my team's web application, PRIDEline, a search engine which indexes book databases for literature with LGBTQ+ themes and authors. Built using the MERN (MongoDB, Express.js, React, Node.js) stack.