

Saron Bhoopathy

West Lafayette, IN 47906 ♦ sbhoopat@purdue.edu ♦ +1-765-421-3847

EDUCATION

Purdue University, West Lafayette, IN

Bachelor of Science

December 2022 (expected)

Double Major: Aeronautical and Astronautical Engineering, Biological Sciences

GPA: 3.70/4.00

Minor: Chemistry

ENGINEERING PROJECTS

Micro Gas Turbine

Senior design, personal project

May 2022 — Present

- Designed and fabricated a micro gas turbine capable of producing approx. 90 N of thrust.
- Modelled and manufactured parts using CAD/CAM, TIG welding, and CNC.
- Computed and analyzed performance metrics in MATLAB.

Air Force Research Laboratory—Unmanned Aerial Systems

Vertically Integrated Projects

January 2022 — June 2022

- Facilitated a team of 6 interdisciplinary students in developing a biomedical drone capable of delivering nalaxone to opiate overdose patients.
- Developed path planning for UAVs using the Rapidly-exploring random tree (RRT) algorithm.
- Established co-ordination algorithm for swarm flying of small UAVs.

Automation in Kerbal Space Program

Personal project

July 2021 — October 2021

- Developed a Python script that automates a rocket launch into low planetary orbit using a PID controller to limit maximum allowable dynamic pressure.
- Utilized remote procedure call (krpc) to access the Kerbal Space Program API for use as a simulation tool.
- Project GitHub: <https://github.com/theflyingrunner/ksp-krpc>.

RESEARCH EXPERIENCE

Digital Agriculture Discovery Lab, Purdue University, West Lafayette, IN

Summer Undergraduate Research Fellowship

May 2022 — August 2022

- Spearheaded the development of a software-in-the-loop simulation of co-operative UAV-UGV system in agriculture using Robot Operating System 2 (ROS2), Gazebo, and PX4.
- Integrated the YOLOv3 object detection algorithm for detection of anomalies such as weeds in corn field.
- Implemented MAVLink communication protocol for heterogeneous multi-vehicle co-operation.
- Authored technical report, conducted literature review, reported progress at weekly meetings, and presented work at the Summer Undergraduate Research Fellowship Symposium.

Suter Lab, Purdue University, West Lafayette, IN

Undergraduate Research Assistant

June 2018 — May 2020

- Analyzed role of enzyme nox2 in cell signaling cascades involving reactive oxygen species using zebrafish retinal ganglion cells.
- Performed neuronal cell culture experiments and extrapolated data contributing to a publication.
- Presented research posters at state and local symposiums.
- Collaborated in joint lab meetings and journal club to discuss research progress.

LEADERSHIP EXPERIENCE

University Residences, Purdue University, West Lafayette, IN

Residence Education Assistant

August 2021 — Present

- Supervise 12 paraprofessional staff members through training sessions, weekly one on one meetings, and job responsibilities.
- Participate in a professional level on-call duty rotation for crisis situations for an on-campus community of 2,000+ residents.
- Implement training sessions for topic areas in crisis response, incident documentation, and diversity, equity, and inclusion.

Resident Assistant

August 2018 — August 2021

- Facilitated the academic, social, and personal well-being of a community of over 50 undergraduate and graduate residents.
- Managed front office duties, partnered with law enforcement in responding to residence hall emergencies, and documented incidents.
- Organized educational programs, tracked budgets, and designated team responsibilities.