Samitha Ranasinghe

+1 (765) 701-9189 | sranasi@purdue.edu | samitha-ranasinghe.com | LinkedIn | GitHub

Education

Purdue University, College of Engineering – BS, Computer Engineering **Expected:** May 2024
Artificial Intelligence and Machine Learning Concentration with a Certificate in Entrepreneurship and Innovation
Core GPA**: 3.71**/4.00 | Dean's List and Semester Honors – Fall 2020, Fall 2021, Spring 2022, Fall 2022

Relevant Courses Taken: Advanced C Programming | Electrical Engineering Fundamentals I & II | Python for Data Science | Intro to Digital Systems Design | Signals & Systems | Microprocessor Systems and Interfacing | Data Structures in C Programming

Skills

C Programming | Python | PANDAS | HTML | CSS | JavaScript | Jira | Tricentis TOSCA | Microsoft Azure | Verilog | System Verilog | Embedded C | AMR Cortex M | ROS| Gazebo| GIT | MATLAB | Fusion 360 | Arduino | Shell Scripting | EAGLE | NLP| Q# | React.js

Professional Experience

Acentura Inc – Colombo, Sri Lanka (Remote)
TOSCA Automation Intern Oct 2022 – Present
- Creating automation test framework in TOSCA with familiarization of Modules, Requirements, Test Cases and Execution Lists.
- Designing automated test scripts for Athena Application of Olympus Suite.
- Executing multiple sprints of functional and regression testing while reporting test results and defects.

Purdue Nanoelectronics Research Laboratory
Undergraduate Research Assistant Aug 2022 – Oct 2022
Summer Undergraduate Research Fellow May 2022 – Aug 2022
- Integrated event cameras with respective hardware and algorithms for improvement of Vision-based UAV algorithms.
- Generated a synthetic data set for training Machine Learning algorithms by designing intelligent dynamic Gazebo worlds.
- Automated generation of Gazebo worlds using python scripts based on parameters.

Autonomous Object Tracking UAVs – Virtually Integrated Projects, Purdue University
Autonomous Control Team Co-Leader Aug 2022 – Dec 2022
Drone Control Team Member Jan 2022 – May 2022
- Implemented and improved path planning and obstacle avoidance algorithms using ROS for efficient target following.
- Designed a simulation of the miniature city using Gazebo simulator for pre-testing.
- Organized the 2022 Unmanned Aerial Vehicle Chase Challenge for Low-Power Computer Vision Challenge

Conference Presentations

"A Self-Adapting Wheel System for Space Exploration Rovers" October 2021
International Astronautical Congress 2021, World Trade Center, Dubai, UAE
- Co-authored and presented a paper on an efficient wheel system for space exploration rovers that would reduce instances of slipping and sinkage by integrations of continually adjusting grousers.
- Designed and developed the grouser control algorithm leading to further optimization of the wheel.

Projects

Developer Portfolio Website with React – Personal project Jan 2023 – Present
- Developing my skills in HTML, CSS and JavaScript with React to implement a component-based functionality.
- Designing, building, and publishing a fully functioning standalone web application across several platforms.

Deep Learning Q&A Chatbot using Python – Machine Learning project Dec 2022 – Present
- Generating a story-based Q&A bot based on the BaBi dataset using basic Natural Language Processing theorems.
- Implementing an end-to-end memory based recurrent neural network with multiple layers.

Dijkstra's Shortest Path Implementation in C – Data Structures project Oct 2022 – Dec 2022
- Incorporated Dijkstra's greedy algorithm to identify shortest paths through a weighted grid.
- Optimized the basic algorithm with heaps to minimize space and time complexity.

Activities and Achievements

Lunarbot, Astronautic Competition Team 2019 – Present
- Collaborating with Nexus Aurora, a US startup, to implement novel wheel system in advanced Mars Rover project.
- In progress patent applications in Sri Lanka for both a wheel and a drill system for lunar rovers.
- Awarded the Distinction Award in Singapore Space Challenge 21' for Innovative Lunar Exploration Rover model.