

Atharva Sagale

425 Stageman Coliseum,
Athens, Georgia, USA, 30605

Portfolio
Email address

Education

University of Georgia

PhD Computer Science

August 2023 – Present

Athens, Georgia, USA

Savitribai Phule Pune University

B.E. Computer

August 2017 – May 2021

Pune, Maharashtra, India

Research Experience

Graduate Research Assistant

HeRo Lab, UGA

January, 2024 – Present

Athens, GA

- Developed a distributed control algorithm that restores multi-robot network connectivity using only local neighbor information, cutting the robot movement required by up to 58% over state-of-the-art methods.
- Worked on a distributed localization framework for GPS-denied robot swarms that introduces "shadow edges" to resolve geometric ambiguities in sparse, noisy sensing graphs, reducing localization error by up to 93%.
- Investigating strategies for efficient robot communication, proposing a population protocol-based method that reduces communication cost while maintaining comparable performance.

Other Experience

Embedded Systems Engineer

Shalaka Connected Devices LLP

June, 2022 – July, 2023

Pune, Maharashtra, India

- Edge Computer Driver: Python scripts to handle serial data from multiple ports, with multi-threading.
- Edge Computer Integration: Using Multiprocessing to take inputs for a multiple-camera machine vision system to handle multiple data streams in real-time.
- Dataset creation for RCNN faster DeepL model: Building datasets for a deep learning model, then testing it for accuracy and edge cases on those datasets.
- MQTT API for Cloud computing: Develop various API for sending data from sensors to the cloud in JSON format.
- Media Server: Developed a Media Server for playing offline media as well as online URLs. An application used for displaying on-demand advertisements.

Research Publications

Atharva Sagale, Tohid Kargar Tasooji, Ramviyas Parasuraman "DCL-Sparse: Distributed Relative Localization in Sparse Graphs" – (accepted) IEEE International Conference on Robotics and Automation (ICRA) 2026

Atharva Sagale, Ramviyas Parasuraman "Distributed Connectivity Restoration and Improvement in Networked Robots" – (accepted) IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2026

Specialized Skills

Programming Languages: Python (intermediate), Java (intermediate), C++(intermediate)

Platforms: Linux, ROS, Windows, Arduino, BeagleBone, RaspberryPi

Research and Scientific writing

Data Collection, Data Processing, Data Analysis, Data Visualization