

Sauranil Debarshi

Mobile: (+91) 8135865186 ◊ Email: sauranild@iiitd.ac.in

EDUCATION

Indian Institute of Information Technology Guwahati

Guwahati, India

Cummulative GPA: 7.39/10.0

August 2015 - May 2019

Junior + Senior year GPA: 8.31/10.0

Bachelor in Technology

Department of Electronics and Communication Engineering

Maharishi Vidya Mandir Silpukhuri

Guwahati, India

Percentage: 89.0%

2013 - 2015

Senior Secondary School

Delhi Public School ONGC Nazira

Nazira, India

CGPA: 10.0/10.0

2011 - 2013

Secondary School

RESEARCH INTERESTS

Perception, Motion and Path Planning in Robotics.

RESEARCH EXPERIENCE

Research Assistant

August 2019 - Present

Collaborative Robotics Lab (CORAL), IIIT Delhi

- Working on improving multi-UAV coalition capability through battle damage assessment (BDA) task and performance modeling.

Advisor: Dr. P. B. Sujit

- Working towards Vision-based UAV landing on a moving target using data from a camera.

Advisor: Dr. P. B. Sujit

Research Intern

May 2018 - December 2018

Guide: Dr. P. B Sujit, Associate Professor, Dept. of ECE, IIIT Delhi

- **Solving the Shepherd Problem:** Developed control and herding algorithms for both single and multi-shepherd environments to collect and drive a group of agents to a desired location. Simulated and tested the performance of the algorithms on Rviz and ArduPilot rovers.
- **ROSNet: A WMN based Framework using UAVs and Ground Nodes for Disaster Management:** Implemented a wireless mesh network using stationary/mobile ground nodes and UAVs, to be deployed in various disaster scenarios. Designed a centralized software framework based on ROS for effectively relaying information from one node to another. Developed an interactive GUI using python's Dash framework that allows real-time monitoring of the nodes and UAVs.

Undergraduate Research Thesis

January 2018 - April 2019

Guide: Mohd. Mansoor Khan, Lecturer, Dept. of ECE, IIIT Guwahati

- **Low cost, Portable LED-Spectrophotometer for the detection of Nitrite in Urine:** Developed a fully-functional portable spectrophotometer that uses a UV-LED, a Si-pin photodiode and a microcontroller to detect and warn users of the presence of urinary nitrite in real-time.

PUBLICATIONS

- Roy, N., **Debarshi, S.**, & Sujit, P. B. (2019). ROSNet: A WMN based Framework Using UAVs and Ground Nodes for Disaster Management. Submitted to IEEE Journal on Miniaturization for Air and Space Systems.
- **Debarshi, S.**, & Khan, M. M. (2019). Portable and low-cost LED based Spectrophotometer for the Detection of Nitrite in Urine. IEEE Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON), 2019. (Accepted)

COURSE PROJECTS

- **EEG-based Male-Female classification using Neural Networks:** Used CNN, Pre-Trained CNN (VGG16) + Trainable LSTM and MLP to classify a EEG-dataset into male and female subjects.

TECHNICAL SKILLS

Computer Languages	Python, C++, MATLAB, C, \LaTeX
Framework & Packages	ROS, Gazebo, Rviz, SITL, Dash, Flask
Libraries	scikit-learn, OpenCV, NumPy, rospy
Embedded Boards	Raspberry Pi 3, Arduino Uno

ACADEMIC ACHIEVEMENTS

- Only undergraduate student to be selected for a fully-funded research project under the institute.
- Top three undergraduate researcher in the Dept. of ECE for three consecutive semesters.
- Demonstrated ROSNet on Socialis Impremiere - the student exhibition event at IEEE RO-MAN 2019.
- Secured third state rank in International Olympiad of Mathematics.

RELEVANT COURSES AND PROGRAMS

Robotics Software Engineer Nanodegree (Udacity), Advanced Control Systems, Image Processing, Embedded Systems, Control Systems, Digital Signal Processing, Mathematics II: Linear Algebra and Calculus, Mathematics III: Probability, Digital Design, Signals and System

EXTRA-CIRRICULAR

- Team Leader of IIIT Guwahati Table Tennis team; Silver Medalist in the 2016 All India Inter-IIIT Sports Competition.
- Part of the Soccer team that won the Silver Medal in the Inter-IIIT Sports Competition 2016.
- Gold Medalist in Table Tennis at the Annual Sports Competition of IIIT Guwahati 2016, 2018, 2019; Silver Medalist in 2017.