Suhrudh S

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Third Year Undergrad at BITS Goa, India (Major: EEE, Minor: Phy)

EDUCATION

BITS PILANI
BE in Electrical Eng
Aug 2019-Present | Goa, India
Major in Electrical Eng
Minor in Physics
CGPA: 7.78/10

LINKS

Twitter:// SuhrudhS
Github:// SuhrudhSarathy
LinkedIn:// Suhrudh Sarathy

COURSEWORK

UNDERGRADUATE
Calculus, Probability and Statistics
Linear Algebra, Differential Equations
Optimisation
Mechanics, Oscillations and Waves
Computer Programming
Control Systems, Modern Control Systems

OTHERS
Introduction to Robotics
Advanced Robotics

SKILLS

PROGRAMMING
Proficient:
Python • Shell • C/C++
Comfortable:
Javascript • MATLAB • LaTeX• QML

TOOLS
Pytorch • Tensorflow • Numpy • Matplotlib • OpenCV
ROS1 • ROS2 • Arduino

VOLUNTEER

•Senior Core Member (2019-Present), Electronics and Robotics Club(ERC)
•Senior Core Member (2019-Present), Aerodynamics Club
•Core Member (2020-2021), Project Kratos

RESPONSIBILITIES

PRESIDENT, CTE
• Lead a team of 40+ people at BITS Goa to increase the tech culture by conducting workshops, funding projects and mentorship

EXPERIENCE

PEPPERMINT ROBOTS | Robotics Intern
June 2021 - July 2021 | Pune, India
•Developed a new Human Machine Interface in **QtQuick and QML** that is touch enabled. • Worked on developing a Motion Primitives based local path planning algorithm. Tested and optimised the planning time to be less than 100 ms.

OTTONOMY | Robotics Intern
Sep 2021 – Dec 2021| Remote
• Tested and compared Sampling based and search based planning algorithms for Navigation in Urban environments • Developed a 2.5D search based algorithm and designed and tested heuristics for planning.

STATE ESTIMATION FOR AUTONOMOUS UAV | Research
• Conducted research under Prof. Rakesh Warier on State Estimation techniques for transition between indoor and outdoor environments. • Learnt and compared between different paradigms of State Estimation.

PROJECTS

AUTONOMOUS DRONE | Open Source, Personal
August 2020 – December 2020
• Built a ROS package for an Indoor Autonomous Drone. • Successfully wrote and tested an RRT based 3D Path Planner with Trajectory Optimisation. • Wrote an article on my website on the project.

TROTBOT | Open Source, ERC
Jan 2020 – Present
•Restructured and built the software stack for an **Omni directional autonomous indoor robot**. • Researched and implemented indoor localisation. • Lead the team on research and future development using learning based techniques.

GENNAV | Open Source, ERC
May 2020 – Oct 2020
• Contributed to building a modular python package for autonomous navigation algorithms. • Worked on integrating the algorithms to ROS using a wrapper.

3D MAPPING OF DRONE SWAMPS | Funded Project, Goa
Sept 2021 - Dec 2021
• 3D Mapped an area of 44.8 sq. km of Mangrove Swamps in and around Goa using a DJI Phantom • Built a Ensemble model for Species Identification (acc. 86%, f1. 0.86) and an app using TKinter.

TEACHING

INTRODUCTION TO AERODYNAMICS AND AERIAL ROBOTICS | CTE
Jan 2021 – May 2021
• Designed the Aerial Robotics Part of the Course. •Taught basics of Path planning, Perception and State Estimation. Provided materials and live coding sessions for implementing various Algorithms.

ROBOT AUTOMATION USING ROS | QSTP
Jul 2021 – Sept 2021
• Designed and taught a course on Robot Automation using ROS. Provided Resources for Python Programming, Control Theory, Path Planning.