VISWANADHA ANURAG VISAGAKOTI

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5+ years experience in industry • 4+ years research experience

PROFESSIONAL EXPERIENCE

Director of Engineering: Treadstone Media Labs, Bengaluru, India March 2022 – July 2022

Project: Graphics Tools development and deployment

- catapulted research, development, and deployment of graphics tools aimed for animation content generators.
- Leveraged large dataset of 3D models for deep learning based 2D sketch to 3D model generation.
- deployed graphics tools to customers using containerization and Kasm workspace automation for remote access.

Systems Engineer/researcher: TCS Innovation Labs, Kolkata, India March 2017 – April 2020

Project: Retail Space Automation employing Drones, Research and Development

- Established laboratory setup. Devised calibration of motion capture sensors, on-board sensors, ROS, Gazebo and RViz.
- Employed ORB-SLAM based dense 3D reconstruction of indoor environment with drone mounted Intel real-sense stereo camera. Implemented ROS navigation stack on top of 3D occupancy grid map.

Mechanical Design Engineer: Asimov Robotics, Kochi, India Feb 2016 – April 2016

Project: Design and development of public relations humanoid robot

- Headed a team of 6, designed and built humanoid service robot comprising of a manipulator, a human robot interface, mobile base with 2D lidar, implemented navigation based on 2D LiDAR SLAM.

ACADEMIC PROJECTS

NeRF based navigation for autonomous vehicle, ASU, Arizona, USA

- Developed a navigation planner using NeRF based 3D representation. Awaiting paper submission on the same.

GNSS integrated LIO-SAM (SLAM) for Georeferenced mapping, ASU, Arizona, USA

- Integrated GNSS and LiDAR mounted on a mobile vehicle with LIO-SAM achieving georeferenced mapping. Semantic segmentation of infrastructural objects in the 3D point cloud.

Floating base Dual-arm Space Manipulator, Thesis Project, RRC, IIIT-Hyderabad (Research Assistant)

- Research involved Task priority-based manipulation, multi-body dynamics formulation, visual servo control, planning in image space for a floating base redundant dual-arm space manipulator. ICRA[3], IROS[1], ICAR[2].

PUBLICATIONS

- [1] Rachit Bhargava, P.Mithun, V. V. Anurag, A.H.Abdul Hafez, S. V. Shah "Image Space based Path Planning for Reactionless Manipulation of Redundant SpaceRobot" IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS),Korea, October 2016.
- [2].Shah, S. V., Viswanadha Visagakoti, Anurag, Abdul Hafez, A. H., "Switching method to Avoid Algorithmic Singularity in Vision-based Control of a Space Robot", International Conference on Advanced Robotics(ICAR), IEEE, May 2015, Istanbul, Turkey

EDUCATION

M.S. Robotics and Autonomous Systems (Systems Engineering) May 2024 (Expected)
Arizona State University, Tempe, AZ 4.0 GPA
M.S. Computer Science and Engineering July 2016
International Institute of Information Technology (IIIT), Hyderabad, India
B.Tech. Mechanical Engineering June 2010
Vellore Institute of Technology (VIT), Vellore, India

TECHNICAL SKILLS

Programming: Python, C++, MATLAB
Libraries: opencv, ceras, g2o, tensortlow, pytorch, GTSAM
Tools & Software: ROS2, ISSAC, GAZEBO, RVIZ, Solidworks, Simulink, MSC ADAMS, Motive (Motion capture)

AREAS OF EXPERTICE

Areas of Interest: Robotics, SLAM (Simultaneous Localization and Mapping), Photogrammetry, Autonomy, Deep Learning for Robotics, Linear Algebra, Manipulator dynamics and control.

EXTRACURRICULARS

- Teaching Assistant for Linear Algebra and Manufacturing Systems Managements graduate course.
- Ardent Tennis player. Represented State of Andhra Pradesh.