VIVEK MANGE

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EDUCATION

Master of Science in Robotics Feb 2023 - May 2024
University of Delaware, Newark, DE GPA: 3.5 / 4.00

Bachelor of Technology, Electronics and Telecommunication Aug 2016 - Oct 2020
K.J. Somaiya College of Engineering, Mumbai, India GPA: 6.8 / 10.0

TECHNICAL SKILLS

Programming: Python, C++, MATLAB
Platforms: Linux, ROS, ROS2, Gazebo, ARM Architecture, SLAM, Computer Vision, PyTorch, Git, Docker, Jira, AWS
Equipment: ARM:Raspberry Pi, Arduino, Odroid:Xu4,H3,H3+, Jetson:Nano,TX1/2,Xavier NX, Realsense:D435,455

PROFESSIONAL EXPERIENCE

University of Delaware, United States: Research Intern / Graduate Research Assistant Jun 2023 - Present
- R&D a dynamic Controller for Aqua2 a marine robot from Independent Robotics on simulations and robot
- Application of on board controller logic, basic manoeuvre testing underwater and perform sensor calibration

Swift Robotics, United Kingdom: Robotics Engineer Sep 2022 - Jan 2023
- Designed a multi sensor platform software solutions using Lidar and depth cameras combining with autonomous navigation and SLAM algorithms, result increase the FOV by more than 50% and accuracy of maps by 40%
- Evaluating the software stack on SBCs such as Odroid H3/H3+ and Jetson Nano with various sensors to enhance system performance by 30% and reduce message latency issues by 40%

Drishti Works Pvt LTD, India: Robotics Software Engineer May 2020 - Aug 2022
- Engineered a user-friendly GUI for clients, enabling easy access and real-time updates, while also modeling AMRs on Gazebo simulations, structuring the software stack, and managing OTA updates via AWS.
- Streamlined hardware-software integration, leveraging kinematic analysis and sensor data for 50% reliability boost and 40% reduction in testing downtime
- Designed a real-time diagnostic and documentation framework utilizing analytical metrics for efficient debugging and troubleshooting, resulting in a 60% improvement in robot deployment efficiency

PROJECTS

Robot Navigation, University of Delaware Aug 2023 - Dec 2023
- Implemented mine sweeper algorithm using OpenCV with HSV color scheme and pixel tracking for precise target engagement
- Programmed wall following algorithm on iRobot Create3 with realsense depth camera and a lidar

ARM Robot Controller, University of Delaware Feb 2023 - May 2023
- Formulated a trajectory planning controller for a 7DOF robotic arm (LBR iiwa 7R800, KUKA), ensuring 1mm accuracy in pose tracking
- Categorized robotics concepts like Forward & Inverse Kinematics, Jacobian, Singularity, and Pos/Vel joint limits

Humanoid Robot, Riidl, India Aug 2019 - May 2020
- Constructed a face recognition system with gimbals and a vision-based tracker for integrating eye movement
- Fabricated a prototype leg mechanism featuring static balancing using a PID controller & proximity sensors

The Marine Robotics Team (TMRT), India Aug 2017 - Mar 2020
- Team lead of a multi domain and cross-functional teams of over 30 members collaborating operational excellence and achieve project success
- Developed a Semi-Autonomous Underwater Vehicle (AUV) for the Singapore Underwater Robotics Challenge
- Programmed a custom controller integrating low level sensors and PID tuning systems to ensure dynamic stability
- Ranked among the Top 30 teams in the 2018 and 2019 Singapore AUV Challenge international competitions
- Technical Research paper on Electronics and Software stack for AUVs

HONORS

- Project demonstration to Honourable Prime Minister of India Shri Narendra Modi
- TEDx speaker on marine robotics and its applications