Pruthvi Sanghavi

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Education

University of Maryland — College Park, Maryland
Masters of Engineering in Robotics — anticipated: May 2021

LDRP Institute of Technology and Research — Gandhinagar, India
Bachelors in Mechanical Engineering — completed: May 2019

Technical Experiences

University of Maryland - Collective Dynamics and Controls Lab (CDCL) — College Park, Maryland
Research Assistant - RESUME (**Research in Electric Scooter Mobility**) — ***Supervisor: Dr. Derek Paley***
- 3D Mapping, SLAM and Inertia + GPS + Vision Sensor Fusion
- **Crowd Dynamics** (Chaotic system analysis) and **Simulations** (Social force theory)
- Analysis of Pedestrian Data using Machine Learning
- Received the MTI **(Maryland Transportation Institute)** grant of **50,000$**.

Robotics Lab — Gandhinagar, India
Research Intern - Multimodal Robotics Research — ***Supervisor: Dr. Kaushal Bhavsar***
- Researched, **Designed and Prototyped a multi-modal triphibian surveillance robot** (AWL-SB)
- Vision System and **Foldable Propeller BLDC gear box Design**.
- Designed a **compact aerial module**, fabricated it and combined it with a land motion module.
- Participation in **DRDO Robotics and Unmanned Systems Exposition** with project **AWL-SB.**

Projects

Path planning by Dijkstra Algorithm (link). Robot path planning algorithm programmed on python.
8 Puzzle Solver using BFS (link). Programmed on python using linked list to search for optimum solutions.
AR Tag Detection (link): Programmed on python and opencv to detect an tag and perform Augmented Reality.
Lane Detection and Prediction (link). Programmed a software for lane tracking and turn prediction.

Publications

Sanghavi Pruthvi S., et al."**Oxygen generating system for underwater breathing using counterflow diffusion: a concept.**" International Journal of Engineering Research and Technology, ISSN: 2278-0181.
Air Water and Land - Surveillance Bot (AWL – SB) Patent: Air Water and Land Surveillance Bot (AWL – SB) (Indian Patent Pending Number: IN201921014502)

Relevant Courses**: Perception**, **Path Planning**, Linear Controls, Nonlinear Controls, **Software Development**,
Computer Language**: C++, Python** and **Matlab** | Other platforms**:** Git, **ROS (Robot Operating System)**
Simulation Platform**:** Gazebo, Simulink, WeBots, Vrep, PyBullet, MUJOCO, Vissim, Anylogic
Data Modeling**: Tensorflow**, Pandas, keras | Cloud Technologies: Google Colaboratory, Amazon Web Services
Libraries**: OpenCV, Numpy, Matplotlib, Scipy** | Other Interests: **Reinforcement Learning**, Virtual Reality & Haptics