Vishnu Prem

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EDUCATION

University of Pennsylvania, School of Engineering & Applied Science — *Philadelphia, PA*
Candidate for Master of Science in Engineering in Robotics – *GPA: 3.33/4* — *May 2021*
Courses: Design of Mechatronic Systems, Introduction to Robotics, Applied Machine Learning, Machine Perception, Learning in Robotics, Deep Learning for Data Science

Manipal Academy of Higher Education, School of Engineering & IT — *Dubai, UAE*
Bachelor of Technology in Mechatronics Engineering; minor: Robotics and Automation —*GPA*: *9.46/10* — *Oct 2018*
Research Abroad: University of Salford, UK in Spring 2018

EXPERIENCE

Autonomous Systems and Advanced Robotics Research Centre- University of Salford — *Manchester, UK*
Undergraduate Student Researcher — *Feb 2018 – May 2018*

- Development of navigation and localization software stack using ARIA API for Pioneer P3DX robot platform
- Incorporated 3D depth camera and deep learning object detection model for landmark based localization
- Implemented complementary sensor fusion model of multiple sonar sensors for obstacle avoidance

Mimic Production — *Berlin, Germany*
Robotics and Animatronics Intern — *Mar 2019 – May 2019*

- Developed software pipeline in Python for animatronic control on embedded Linux platform

Pico International — *Dubai, UAE*
Intern- Digital Media & IT department — Jul *2019 – Aug 2019*

- Developed embedded software for mechatronic exhibits at events and exhibitions

RELEVANT PROJECTS

[portfolio: vishnuprem.github.io **for more]**

FMT* Planning framework for Autonomous Cars *(2019)*
- Fast marching tree planner for global planning for Autonomous Cars in C++ with ROS framework

A* Planner *(2019)*
- C++ implementation of path planning algorithm for 2D grid

RRT for Lynx robot *(2019)*
- Sampling based planning algorithm implemented for Lynx robot in 3D space

Artificial Potential Fields *(2019)*
- Real time dynamic motion planning for 5 DOF robot manipulator

Semi-Autonomous Battle-bot *(2019)*
- Fabricated and programmed differential drive robot to localize using IR beacon in embedded C
- Set up remote control via UDP and implemented PD control for autonomous navigation

RL for Bipedal walking *(2017)*
- Reinforcement Learning to train a two-legged agent to walk using Python and OpenAI Gym

COMPUTATIONAL SKILLS

C++, Python, Embedded C, MATLAB, Java, Linux, ROS, git

ACTIVITIES & OTHER ACHIEVMENTS

Volunteer Head of Mechatronics Department for annual tech festival Technovanza'17 at MAHE Dubai • 1st Place in 'Institute of Physics' Young Lecturer Competition '18 at Manchester Metropolitan University, UK • Best Actor Award at Interhouse Drama Competition '14 SEPS, Abu Dhabi • Best Speaker at Interhouse Debate Competition'14 SEPS, Abu Dhabi

References available upon request