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, Deep Learning for Data Science, Learning in Robotics

Manipal Academy of Higher Education, School of Engineering & IT — *Dubai, UAE*
Bachelor of Technology in Mechatronics Engineering— *GPA*: 9.46/10; Minor: Robotics and Automation — *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-Guide: Dr. Theo Theodoridis — *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 location
- Implemented complementary sensor fusion model for 8 sonar sensors for obstacle avoidance
- Retrained object detection model on new classes using transfer learning

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

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

Pico International — *Dubai, UAE*
Mechatronics Intern — *Oct 2018 – Jan 2019*

- Developed embedded software in Python and C++ for mechatronic projects at events and exhibitions

TECHNICAL SKILLS

- *Software*: C, C++, Python, ROS, Git
- *Libraries:* OpenCV, Numpy, PyTorch, OpenAIGym

RELEVANT PROJECTS

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

Semi-autonomous Battlebot

- Programmed embedded platform for robot localization using IR beacon and incorporated PD control for autonomous navigation

Deep Learning for Violence Detection *(2019)*

- Developed video preprocessing pipeline and extracted optical flow data to train convolutional neural network to detect actions deemed to be violent from videos using PyTorch and OpenCV

Chess Playing Robot *(2017)*

- Developed computer vision algorithm in Python using OpenCV for tracking chess pieces and move identification
- Programmed embedded platform for electromechanical control of robot arm

Motion Tracker *(2017)*

- Surveillance camera developed on embedded platform for tracking human motion using OpenCV and Python

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