**Vishnu Prem**

**email** vprem@seas.upenn.edu • **website** <vishnuprem.github.io> • [**linkedin**.com/in/vishnuprem6/](https://www.linkedin.com/in/vishnuprem6/) • **phone**  +1 (267)-916-6313

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**EDUCATION**

**University of Pennsylvania,** School of Engineering & Applied Science *Philadelphia, PA*

Candidate for Master of Science in Engineering in Robotics *– GPA: 3.3/4* *May 2021*

*Courses: Design of Mechatronic Systems, Introduction to Robotics, Applied Machine Learning*

**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**

**Penn Engineering Online Learning** *Philadelphia, PA*

*Teaching Assistant Oct 2019 - current*

* Supporting online learners by answering queries on forums for 6 Robotics Specialization courses on Coursera

**Mimic Production** *Berlin, Germany*

*Robotics and Animatronics Intern*   *Mar 2019 – May 2019*

* Developed software pipeline in Python for animatronic control of robot face with RaspberryPi
* Designed and prototyped mechanism for realistic humanoid robot face

**Autonomous Systems and Advanced Robotics Research Centre - University of Salford** *Manchester, UK*

*Undergraduate Student Researcher Feb 2018 – May 2018*

* Created algorithms for mobile robot localization using computer vision with depth camera
* Implemented obstacle avoidance using sensor fusion of multiple sonar sensors
* Deployed deep learning-based object detection model and retrained on new classes using transfer learning

**Pico International**  *Dubai, UAE*

*Intern- Digital Media & IT department* Jul *2019 – Aug 2019*

* Implemented and tested software for mechatronic exhibits at events and exhibitions

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**TECHNICAL SKILLS**

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

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**RELEVANT PROJECTS** [**[portfolio:** vishnuprem.github.io **for more]**](https://vishnuprem.github.io/)

**CNN for Violence Detection from videos** *(2019)*

* Extracted optical flow data to train CNN for detecting violent actions from videos using PyTorch and OpenCV

**FMT\* Planner** *(2019)*

* Fast marching tree planner implementation in C++ with simulation in RViz using ROS

**Chess Playing Robot** *(2017)*

* Developed computer vision algorithm using Python and OpenCV for detecting move made by human
* CAD design and 3D printing of robot arm and gripper to pick and place chess pieces

**Motion Tracker** *(2017)*

* Surveillance camera that detects and turns towards detected motion using OpenCV and Python

**RL for Bipedal walking** *(2017)*

* Built and optimized a NN controller with genetic algorithm for a two-legged agent using Python and OpenAI Gym

**Tic-Tac-Toe Program** *(2013)*

* C++ program that plays Tic-Tac-Toe against a human

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**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