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

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 — *Feb 2018 – May 2018*

- Developed algorithm for mobile robot localization based on visual landmarks using 3D depth camera
- Deployed object detection model for identifying landmarks and retrained on new classes using transfer learning
- Implemented obstacle avoidance using sensor fusion of multiple sonar sensors

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 fabricated mechanism for realistic humanoid robot face

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

- Developed embedded software for mechatronic exhibits at events and exhibitions

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TECHNICAL SKILLS

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

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

CNN for Violence Detection from videos *(2019)*
- Extracted optical flow data to train CNN to detect violent actions from videos using PyTorch and OpenCV

Chess Playing Robot *(2017)*
- Developed computer vision algorithm using Python and OpenCV for tracking chess pieces and identifying move
- 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