VISHNU PREM

Mechatronics engineer with quick grasping skills looking for junior positions to work closely with technology

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EDUCATION

2018 — **Bachelor of Technology in Mechatronics Engineering with minor in Robotics and Automation** — *Dubai, UAE*
Manipal Academy of Higher Education (MAHE), Dubai
Dissertation topic: Landmark based Localisation of Indoor mobile robot using Object recognition
CGPA: 9.46/10

2014 — **CBSE Board 12th Grade, Science stream** — *Abu Dhabi, UAE*
Sunrise English Private School, Abu Dhabi
Percentage: 94.6%

2012 — **CBSE Board 10th Grade** — *Abu Dhabi, UAE*
Our Own English High School, Abu Dhabi
CGPA: 9.8/10

WORK EXPERIENCE

Oct 2018 - Present — **Intern(Digital Media & IT department)** — *Dubai, UAE*
PICO International (Brand activation company)
- Assisted in project management of Sliding screen activation for NPCC at ADIPEC 2018
- Conceptualization of new technical solutions for brand activation
- Research on methods to automate HVAC system based on human occupancy
- General IT support

Feb 2018- Jun 2018 — **Undergraduate Student Researcher** — *Manchester, UK*
Autonomous Systems and Advanced Robotics Research Centre, University of Salford
- Worked closely with project mentor to conduct research on indoor robot navigation and localization
- Developed deep learning based program to detect objects from an image
- Designed, developed and tested algorithm for implementing navigation, localization and obstacle avoidance in mobile robot

Jul 2016- Aug 2016 — **Engineering Trainee** — *Abu Dhabi, UAE*
Dolphin Oilfield Equipment Services LLC
- Worked closely with senior employees to learn about different heat exchangers and manufacturing methods
- Trained on various techniques of heat exchanger assembly and maintenance

ACADEMIC PROJECTS

Feb 2018 – May 2018 — **Landmark based Localisation and Navigation of Indoor Mobile Robot using Object recognition** — *video* *source code*
TECHNOLOGIES: Java, Python, Tensorflow, OpenCV, Pioneer P3DX robot
- Developed algorithm for Indoor mobile robot to navigate using RGBD sensor data
- Developed algorithm for robot localization by triangulation based on position of indoor landmarks
- Carried out obstacle avoidance using sonar sensor data

Nov 2016 – Feb 2017 **Chess Playing Robot** *video* *source code*
TECHNOLOGIES: Python, CAD, 3D Printing, Arduino, OpenCV
- Built a robot that can play chess ground-up
- Developed image processing algorithm for detecting and identifying chess move made by human player
- CAD design and 3D printing of gripper and mechanism to pick and place chess pieces
- Implementation of electromechanical components for control of robot arm
- Overall integration of image processing, robot arm mechanism, move deciding algorithm and electrical components and motors to form a chess playing robot capable of beating a human

Jul 2017 – Aug 2017 **Gait development for Bipedal Agent** *video* *source code*
TECHNOLOGIES: Python, Machine Learning, Genetic Algorithm
- Design and development of control system for locomotion of two legged agent
- Built a neural network from scratch and optimized to be a controller using genetic algorithm
- Evaluation of performance carried out in simulation

Nov 2016 **Motion tracking Camera** *source code*
TECHNOLOGIES: Python, Arduino, OpenCV, Image Processing
- Development and implementation of algorithm to detect motion in dynamic images
- Implemented closed loop control of motor to turn camera towards detected motion

Oct 2016 **Automated Vehicle Headlights**
TECHNOLOGIES: Python, Raspberry Pi
- Vehicle headlights toggles based on brightness of the environment

Mar 2015 **Geneva wheel indexer prototype**
TECHNOLOGIES: CAD, 3D Printing
- CAD design of Spur gears and Geneva wheel mechanism
- Rapid prototyping of parts by 3D printing followed by assembly

Jul 2013 **Tic-Tac-Toe Bot** *source code*
TECHNOLOGIES: C++
- Developed software platform to enable user to play tic-tac-toe on a computer
- Developed algorithm to defeat human opponent in a game and integrated it with the platform

HONORS AND AWARDS

Mar 2018 1st Place as Lecturer in the university category at 'Young Lecturers/Poster presentation Competition'
hosted by Institute of Physics(IOP) at Manchester Metropolitan University, Manchester, UK

Dec 2017 2nd Place for 'Best Manager' Competition
hosted by School of Business, MAHE Dubai

PUBLICATIONS

"Landmark-Based Localisation Using Object Recognition Based Triangulation for Service Robots"- title of journal paper currently under review for a Springer journal, co-authors: Dr. Theo Theodoridis, Royson D'Souza

TEACHING AND MENTORING EXPERIENCES

Apr 2017 — Head of Mechatronics Department for Technovanza-2017(student organized annual technical festival) held in MAHE Dubai

- Planned and organized department event
- Delegated tasks and allocated budget
- Mentored all junior student volunteers in Mechatronics department

CERTIFICATIONS

Oct 2018 — HTML Fundamentals
SoloLearn

Aug 2018 — C# Training Course
SoloLearn

Feb 2018 — CCNA Routing and Switching: Introduction to Networks
Cisco Networking Academy

TECHNICAL SKILLS

Languages

Python *Proficient*	C++ *Proficient*	Java *Proficient*	C# *Intermediate*
Lua *Basic*	HTML *Basic*		

Software

PTC Creo *Intermediate*	SolidWorks *Basic*	MatLab *Intermediate*	LabVIEW *Basic*
V-rep *Basic*	ROS *Basic*	Unity3D *Basic*	MS Excel *Intermediate*