

# Madhu Vankadari

## Machine Learning Developer

I am a machine learning developer and I develop state of the art machine learning techniques on robots to make them intelligent. Please visit my website for more details

✉ [accesstomadhu@gmail.com](mailto:accesstomadhu@gmail.com)

📞 +91 7899300980

📍 Bangalore, India

📅 19 June 1995

🌐 [madhubabuv.github.io](https://madhubabuv.github.io)

## WORK EXPERIENCE

### ML Developer

TCS Innovation Labs [🔗](#)

07/2016 – Present

Bangalore, India

#### Achievements/Tasks

- Developing machine learning algorithms such as Reinforcement Learning, CNN, etc. in the domain of robotic perception and motion planning. Main focus is to out perform state of the art methods and create new bench marks in the robotics field.

### Summer Research Intern

IIT Kharagpur [🔗](#)

05/2015 – 08/2015

Kharagpur, India

#### Achievements/Tasks

- Developing a simulation and hardware setup for a humanoid robot to implement Reinforcement Learning algorithms such as Q-Learning, LSPI, PI etc. in order to plan a dynamically stable gait.

## PROJECTS

UnDeMoN (03/2018 – Present) [🔗](#)

- Its an unsupervised deep network for estimating depth, ego motion and optical flow for a given sequence of monocular images.

Reinforcement learning control approach for tracking and landing of a UAV (05/2017 – 10/2017) [🔗](#)

- Given an off the shelf drone, with out any explicit information regarding its dynamic model, the flight control will be learned using an RL method named LSPI.

Gradient descent approach for controller design for a UAV (12/2016 – Present) [🔗](#)

- An adaptive PID controller is developed to make sure the stability of the drone in windy environments by using gradient descent to tune its parameters dynamically.

Path finding robot using Q-learning (08/2015 – 12/2015)

- Q learning is used as shortest path finder from starting point to the goal point and then that path is fed to UGV to reach the goal

## EDUCATION

### Bachelors in Mechanical Engineering

IIIT R.K Valley ( RGUKT ) [🔗](#)

07/2012 – 05/2016

CGPA: 8.88/10.0

## SKILLS

TensorFlow

ROS

Gazebo

Python

C++

Scikit-learn

MoveIt

## PUBLICATIONS

Madhu Babu V, Kaushik Das, Anima Mujumder, Swagat Kumar "UnDeMoN: Unsupervised deep network for depth and pose estimation", International Conference on Intelligent Robots and Systems (IROS 2018)- Accepted (06/2018)

Madhu Babu V, Kaushik Das, Swagat Kumar "A Reinforcement Learning Approach towards Autonomous Control and Landing of a Quadrotor", International Conference on Unmanned Aerial Systems (ICUAS 2018) - Accepted (06/2018)

Madhu Babu V, Kaushik Das, Swagat Kumar "Designing of Self Tuning PID Controller for AR Drone Quadrotor", International conference on advanced robotics (ICAR 2017) (05/2017) [🔗](#)

Madhu Babu V, Kaushik Das, Swagat Kumar "Autonomous Leader-Follower Architecture of A.R. Drones in GPS Constrained Environments", Advances in Robotics (AIR 2017) (07/2018) [🔗](#)

Madhu Babu V, Vamshi Krishna U, Shehansha SK "An Autonomous Path Finding Robot Using Q-Learning", International Conference on Intelligent Systems and Control (ISCO 2016). (01/2016) [🔗](#)

## COURSES

Convolutional Neural Networks for Visual Recognition by Stanford University (04/2017) [🔗](#)

Machine Learning by Stanford University (08/2016) [🔗](#)

Course on Reinforcement Learning by University College London (03/2017) [🔗](#)

Robotics: Perception by University of Pennsylvania (09/2017) [🔗](#)

Robotics: Estimation and Learning by University of Pennsylvania (10/2017) [🔗](#)

## AREAS OF INTEREST

Machine Learning

Control

Perception