

# Dhruv Thanki

ROBOTICS ENGINEER

Newark, Delaware, USA

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## Summary

Innovative and passionate Mechanical Engineer looking to gain the necessary education and training to begin a career as a Robotics Engineer so that I am at the vanguard of the forces driving new ideas and technologies in the field of robotics, specializing in the domains of dynamics and control of Under-actuated systems and legged locomotion in particular.

## Work Experience

### Space Application Center - Indian Space Research Organisation (ISRO)

Ahmedabad, India

ROBOTIC RESEARCH INTERN

Jan. 2019 (6 months)

- The major part of my research project was to formulate a tailored closed form solution to inverse kinematics for a 6-DOF Walk-and-Roll rover leg under the guidance of lead researchers Neeraj Mathur and Anurag Verma. (Department:MESA, Group:OPMG, Division: OMDD)

### JMC Paper Tech Pvt. Ltd.

Ahmedabad, India

MECHANICAL ENGINEERING INTERN

May. 2018 (2 months)

- One of the measures proposed was modifying a CNC flame cutting machine which significantly reduced time in cutting sheet metal by devising a custom module for automatic nesting using SVGnest algorithm on a raspberry pi. [\[Link\]](#)

## Projects

### The Waddler

Ahmedabad, India

2018-19

- A biologically inspired non-articulate robot that is able of generating a myopathic gait capable of waddling like a penguin using a reaction wheel to generate a gyroscopic couple which translates the robot forward. The policy is first optimised using a simulation. [\[Link\]](#)

### Oxygen Generating System for under water breathing

Gandhinagar, India

2018

- A biomimicry project design closely based on the structure of the fish gills where counter-flow diffusion occurs due to the oxygen concentration gradient across a membrane hence the oxygen is provided directly to the blood. **(Published a Conceptual Research Paper)**

### Other Projects Include:

Gujarat, India

2015/2017

- Uncrashable Car:** A RC car that avoids collision with obstacles by over-writing user's input according to the data from ultrasonic sensors.
- Self-Balancing Robot:** A workshop for building a robot capable of maintaining vertical position with the help of accelerometer and gyroscope sensors. [\[Link\]](#)
- Hexa-Bot:** A workshop for programming and control of a HexaBot, an arduino based six-legged skeletal robot with configurable predefined motion.

## Education

### University of Delaware, Newark, DE, USA

Fall 2019 - Fall 2021

MS - ROBOTICS, FOCUS ON DYNAMICS AND CONTROL

### LDRP Institute of Technology and Research, Gandhinagar, India

July 2015 - Present

B.E. IN MECHANICAL ENGINEERING

CPI till 7th Sem: 7.2/10

## Co-curricular Activity

### AWL-Bot

Jodhpur, India

DRUSE - DRDO ROBOTICS AND UNMANNED SYSTEMS EXPOSITION (COMPETITION)

April. 2018

Qualified at preliminaries and went on to the West India Zone level where we created a prototype of AWL-Bot (Air, Water, Land) in which we integrated all three different modes of mobility, each for a different medium into a single unit. **(Provisional Patent Completed)** [\[Link\]](#)

## Artificial Intelligence and Machine Learning

Ahmedabad, India

DSI, GOVT. OF GUJARAT (WORKSHOP)

2018

A primer for supervised and unsupervised learning also gave a comprehensive introduction to neural networks and a deep look into the concept of back-propagation.

## Skills

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### Programming and Mathematical Computing Softwares

PYTHON (INTERMEDIATE) / C / C++ / MATLAB

### Modelling and Simulation Softwares

AUTOCAD / FUSION360 / WEBOTS / V-REP / ROS [INTERMEDIATE]

### Enthusiastic About

ELECTRIC GUITAR / STREET PHOTOGRAPHY / PHYSICS AND ASTRONOMY

### Other Exams

**GRE:** 165, 154, 3.5 (Q, V, AWA) / **IELTS:** 8.5, 8.5, 6.5, 6.5 (L, R, W, S); **OVERALL:** 7.5