Dhruv **Thanki**

ROBOTICS ENGINEER

Newark, Delaware, USA

 +1(302)252-1320 | thankid@udel.edu | dhruvthanki

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 force 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 OF BIPED LOCOMOTION

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

Programming and Mathematical Computing Softwares

Python (Intermediate) / C / C++ / Matlab

Modelling and Simulation Softwares

AutoCAD / Fusion360 / Webots / V-Rep / ROS [Intermediate]

Miscellaneous Skills

Compliant Mechanisms / Deep Reinforcement Learning

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

General Skills

Mac OS, MS Word, MS Excel, Google Docs