CONTACT

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UNNAT ANTANI

ROBOTICS/AI ENGINEER

GOAL

To use my knowledge and passion for Robotic, AI, Physics and Math and experience in a start-up environment to bridge the gap between the research and the industry world with solutions that are scalable and accessible to all.

EDUCATION

Institute of Technology, Nirma University - 2020

B.Tech Mechanical (8th Sem) - 8.1

D. R Amin Memorial School 2014-2016

SSC- 98.32%
HSC- 97.97%

SKILLS

- Programming Languages - Python, C, MATLAB
- Operating Systems - Windows, Linux
- Software - Fusion360, Solid Works, CoppeliaSim, Creo, Maya, Unity, AutoCAD, ROS, Blender
- Hardware Skills - Arduino, Raspberry Pi, Ordroid, Nvidia Jetson Nano, M5Stack, M5Cam, ESP boards.
- Misc - Deep Learning, Computer Vision, System Integration, Robot Design, Path Planning, Soldering, 3D Modelling, POC Building

CERTIFICATIONS

- **Computational Motion Planning**
  Coursera, University of Pennsylvania
  July 2019 - **ZHN36BB9B6RL**
- **Astronomy: Exploring Time and space**
  Coursera, University of Arizona
  June 2019 - **HPCTS2LEHZXG**
- **Neural Network and Deep Learning**
  Coursera, deeplearning.ai
  Jan 2020 - **KPV7L578VMGG**
- **From the Big Bang to Dark energy**
  Coursera - University of Tokyo
  Jan 2020 - **WRFS10DXH95UM**
- **Control of Mobile Robotics**
  Coursera - Georgia Tech
  July 2020 - **UY9W4RWJRKDV**
- **Modern Robotics, Course 1: Foundations of Robot Motion**
  Coursera, Northwestern University
  April 2020 - **HJ8NKDT7QVRK**
- **AI for Medical Diagnosis**
  Coursera, deeplearning.ai
  May 2020 - **49ST453SYCXV**
- **Initiating and Planning Projects**
  Coursera, University of California, Irvine
  May 2020 - **CPYT4L3S5BG4**
- **AI A-Z : Learn how to build an AI**
  Udemy
  Mar 2020 **- UC-58454b07-1e08-4bb6-b889-a2c13ed785dd**
- **Advanced AI: Deep Reinforcement Learning in Python**
  Udemy
  April 2020 - **UC-333fd395-4323-464c-9ff3-bc32aa68d2a2**

PROJECTS

- **Path Planning of Redundant manipulators using AI(Final Sem Project):** A Deep Reinforcement learning model was made and successfully implemented on a UR10 robot in the CoppeliaSim Software.

Primary Skills: Robotics, Topology, Algebra, Differential Geometry, Calculus, Python, Path Planning, Reinforcement Learning, Deep Learning

- **Hexabot**: Kinematic and 3D modelling of a hexabot
- **2D - guiding system**: Low cost automation project using Arduino to build 2 axes guiding system using lead screw.
- Worked with latest tech and developed POC and simulations of the same as intern experience.
- On site experimentation and system integration and analysis a part of internship experience,
- I love to build code to simulate the concepts of physics ranging from mechanics and gravity to relativity and concept of spacetime.
- Built projects like Quadcopter and other electronic and robotics hardware

TIMELINE

Dec 2018 - Dec 2019
IEEE Student Branch Nirma University

Chair

May 2019 - Jul 2019
Jeebly

Intern:
- Working on Iot Devices
- Embedded systems

Feb 2019 - Jul 2019
Fero.Ai

Intern:
- Computer vision
- Robotics
- Proof of Concept
- 3D Modeling
- CoppeliaSim

Jan 2020 - Jul 2020
Fero.Ai

ML/Robotics Research Intern:
- Deep learning
- Computer Vision
- Prototype Testing
- Major Project Completion

July 2020 - current
Fero.Ai

Research Engineer
- On going research on non-linear conrol using Neural Networks

WORK EXPERIENCE

FERO.AI

R&D ENGINEER : AUGUST 2020 - PRESENT

- As a R&D Engineer, working on vehicle routing and assignment problem.
- Also working on Non-Linear control using Neural Networks

Tools Used: Python, Django, Google Osm, Pytorch, Tensorflow, Keras, Control Theory, Differential Equations, Linear Algebra

ML/ROBOTICS RESEARCH INTERN: JAN 2020-JUL 2020

- As a research intern, worked on path planning algorithms and visualized the same using python.
- Completed Major Project titled "Path Planning of redundant manipulator using AI"
- Implemented Reinforcement Learning and Deep Reinforcement Learning on CopelliaSim Robot simulation.
- Developed and tested hardware of a prototype we developed for damage detection

Tools Used: Python, Topology, Differential Equations, Linear Algebra, OpenCV, Deep Learning, Reinforcement Learning, Deep-RL Learning, Path planning, AI, Keras, Electronics, Raspberry Pi, Prototype Building, CopelliaSim Software

INTERN: FEB 2019 - JUL 2019

- As an intern, developed 3D Models and Simulation setup for PoC of damage detection in CopelliaSim
- Wrote code to extract data from the simulation
- Documentation of the project
- Tested and implemented AI algorithms in embedded systems
- Face recognition, intruder detection, safety equipment detection using DL

Tools Used: Python, Linear Algebra, Robotics, CopelliaSim, 3D Modeling, Keras, Deep Learning, Arduino, Raspberry Pi, Embedded Systems, Computer Vision

JEEBLY: INTERN MAY 2019-JUL 2019

- Worked on embedded devices to make IoT solutions.
- IoT Devices integrated with sensors like Temperature sensors, blue tooth module to acquire data

Tools Used: Python, IoT, Embedded Systems, Arduino, Raspberry Pi, M5Stack, M5Cam