ADITYA JAGANI

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EDUCATION

K.J. Somaiya College of Engineering, Mumbai, India **June 2019**

Graduated with Bachelor of Technology in Electronics and Telecommunication with *Distinction* **(CGPA: 8.26/10)**

Relevant Coursework: Control Systems, Applied Mathematics, Engineering Mechanics, Engineering Graphics, Software Simulation Lab, Advanced Microcontroller Lab, Neural Networks & Fuzzy Logic.

PROFESSIONAL EXPERIENCE

Research Innovation Incubation Design Labs (RIIDL), Mumbai, India **June 2019 – January 2020**

Intern – Team Lead

- Documented and drafted detail-oriented proposals to acquire funding from potential sponsors in form of hardware such as sensors (Kinect depth sensor) and actuators (geared DC motors) for successful completion of project.
- Enhanced python programming skills of 3 junior interns and guided them to simulate an interactive human conversation using Artificial Intelligence Markup Language (AIML) based static database using PyAudio for Speech to Text and vice-versa.
- Implemented Gantt Chart on AirTable to execute project planning for optimized and timely completion of tasks.

Eduvance, Mumbai, India **June 2018 – July 2018**

Trainee

- Developed Multi-Nodes Wireless Data Acquisition System on MBED platform using Programmable System on Chip (PSoC).
- Incorporated ESP8266 Wi-Fi Module for logging real-time multiple sensor values onto ThingSpeak platform for live monitoring.
- Designed Wireless Gesture Controlled Mouse using NXP's FRDM-KL25Z development platform by interfacing sensors such as capacitive touch sensor, NRF, accelerometer.
- Transmitted data using short-range wireless node-to-PC communication technology to control mouse on PC screen.

AM Designs, Gujarat, India **June 2017 – July 2017**

Project Planning Engineer Intern

- Received training on engineering drawing comprehension, feasibility study, 3D modelling, CNC programming, manufacturing cycle for Milling and Turning, and quality control process.
- Organized weekly schedules for manufacturing CNC work pieces and monitored them closely throughout their manufacturing cycle by working alongside factory floor managers in accord with client's specifications

ACADEMIC PROJECTS

Autonomous Logistics Application for Warehouse

- Utilized ROS tools to simulate a warehouse application on Gazebo to autonomously transport goods from a conveyor belt to a storage bin through industrial robot arms and a mobile robot leveraging state machines.
- Developed Action Nodes to compute motion planning using MoveIt for executing pick and place behaviors on industrial robot arms.
- Implemented the Monte-Carlo method for localization of the AGV to create a map of the custom environment using GMapping to autonomously navigate around the factory floor.

Humanoid Robot

- Designing a PID controller for bipeds to achieve statically stable locomotion using COG as feedback parameter on ROS framework and implemented Kalman Filter on 6-axis IMU sensor data to refine states.
- Simulated custom SolidWorks design of bipeds on Gazebo for testing controller behaviour and overall stability.
- Implemented pre-trained supervised learning algorithm using OpenCV API's in Python to detect and recognise multiple human faces and obtain neck-eye actuation to track faces in frame in real-time without wobbling.
- Extracted facial landmarks (upper lip and lower lip) using 'dlib' library to focus on people speaking in the frame by actuating eye-neck movement of the robot head.

Autonomous Underwater Vehicle (AUV)

- Built a Z-N PID controller for depth hold and roll control using Arduino as controller and Odroid XU-4 as CPU to tackle hydrodynamic forces produced by fluid interaction to stabilize the AUV and achieve station keeping.
- Implemented Complementary Filter on 6-axis IMU sensor data to improve approximation of current states.
- Carried out extensive testing in pool to obtain optimal convergence and minimum oscillations of the plant.

TECHNICAL SKILLS

- C, C++, Python, x86 assembly language | ROS, RViz, Gazebo | MATLAB, SIMULINK, Keil µVision, AutoCAD | Microprocessors: 8085, 8086, LPC2148 ARM7, Arduino, Raspberry Pi 3B, Odroid XU4, PSoC, FRDM-25KLZ.

EXTRA CURRICULAR ACTIVITIES

- Certified Microsoft Technology Associate for 'Introduction to Programming using Python' from ATS Infotech '18.
- Tutored 9 academically weak students to cope up their lagging subject in 2017. Electromagnetic Field Theory.
- Presented a technical paper in college festival 'Abhiyantriki' on 'Embedded Systems in Automobiles', 2018.
- Organizing Committee member for college cultural festival 'Symphony', wherein managed inventory and overlooked expenses in 2015.