CURRICULUM VITAE

Raunak Shailesh Abhani

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EDUCATION

July 2019- Present

Bachelors of Technology (B.Tech.) in Mechanical Engineering

Birla Vishvakarma Mahavidyalaya, Vallabh Vidyanagar, India

Grade: 8.11/10

Jun 2017- April 2019

Higher Secondary School Education (11th and 12th Class)

Shakti school, Rajkot, India

State Board - Percentage: 70% (Physics, Chemistry, Mathematics)

Jun 2016- May 2017

Secondary School Education (10th Class)

Shree G.K. Dholakiya school, Rajkot, India

State Board - Percentage: 85.6%

WORK EXPERIENCE

5 July 2022- Present

Robotics Instructor (Link)

Bright Champs Tech Pvt Ltd - Hyderabad, India

- I am working as lecturer in ROBOCHAMPS whose parent company is BRIGHTCHAMPS and teaches student about Robotics, AI and ML for Robots, Circuits and Signal Systems, Robotics Control System, Internet of Things, Robotics Manipulator, Kinematics and Humanoids, Bio-inspired Robotics, All Terrain Robots. The lectures are conducted over zoom. Also, I am part of curriculum design panel and Evaluation panel.

Skills developed: Teaching, Quarky, TensorFlow, Curriculum design

27 Dec 2022- 09 May 2023

Researcher (Link)

INDIAN SPACE RESEARCH ORGANIZATION (ISRO) - Ahmedabad, India

- As a part of my Curriculum of engineering in 8th Sem of engineering .I worked under Scientist PRERAK CHITNIS on Open loop control of filter wheel for space telescope by using EPOS4 70/15 digital positioning controller.

30 May 2022-30 Jun 2022

Research Trainee (Link)

MahitX Technologies Pvt Ltd - Ahmedabad, India

- The internship focused on development of High temp 3D printer for ULTEM and PEEK. Conducted various experiments on heating elements using PID controller, were able to achieve 180-degree Celsius bed temperature by using nichrome wire which is required temp for printing of ULTEM.

Skills developed: MATLAB, 3D Printing, PID tuning, Control system design.

24 May 2021-23 JULY 2021

R&D Intern (Link)

IIT ROPAR - ROPAR, India

- The internship focused on development of swarm robots for agriculture. We worked on design, analysis, simulation of Swarm harvester for cauliflower and Swarm UAV for precise pesticide spraying and disease detection.

Skills developed: MATLAB, Fusion 360, ANSYS, ROS, Q-ground control.

PROJECTS

Aug 2022 - Dec 2022

Autonomous bot driving system using deep learning (Minor-project - 7th sem) (Link)

- Building an open source self-navigating bot with the help of deep learning approach which is the scaled downversion of self-driving car.

Skills developed: TensorFlow, Open CV, Wireless Communication, Python

Aug 2022 - Sep 2022

Traffic sign classification using CNN (Link)

- This system identifies the traffic signs using CNN. The model is trained using German Traffic Sign Recognition Benchmark from Kaggle.

Skills developed: TensorFlow, Python, Keras, Open CV

June 2022 - July 2022

Gesture-based intelligent appliance control (Link)

- For detecting and tracking landmarks on hands media pipe library is used, Pygame module is used for playback of sound. Arduino receives the data from the python script serially and controls the led based on gesture. The system can be scaled up in smart home to control AC appliances with just hand gesture.

Skills developed: Python, Media pipe, OpenCV, Arduino

June 2022 -July 2022

Lane detection using Open CV (Link)

- Automatically detect lane lines using algorithm.
- Implement operations like Grayscale conversion, Gaussian filter, Canny transform, region masking, plotting lines using matplotlib, Hough transform.

Skills Developed: Python, Open CV, NumPy, matplotlib

Nov 2020 - Dec 2021

SAKSHAM-IoT enabled prosthetic limb with tactile sensors (Link)

- Give amputee complete control over their limbs, can connect to the cloud for data storage and analysis, and feel like an integral part of themselves.
- Winner of GUJCOST ROBOFEST 2.0.

Skills developed: IoT, Fusion 360, 3D Printing.

Sep 2020 - AUG 2021

NETRA-Cooperative drone for payload delivery (Link)

- Every drone connected, share their localization information, distance measuring information to other drones and use it for payload deliveries.
- Funded by Student Startups and Innovation Policy (SSIP) by 1.3 lakh INR.

Skills developed: IoT, Fusion 360, 3D Printing, Q-ground control, ROS

Membership

Dec 2020 - Oct 2022

The Robotics Society, BVM Student Chapter - Anand, India

- It is the robotics club of my college where I am branch coordinator to organize different workshops and events related to robotics and 3-D printing.
- Worked in a team on developing a Prosthetic limb, Cooperative drone, line follower as a part of this club and participated in many competitions.

Sep 2020 - Oct 2022

IE(I) Mechanical-Production, BVM Student Chapter - Anand, India

- It is the student's chapter of my college where I am President. The SC organize different workshops and events related to mechanical domain.

PATENTS

Utility Patent – Smart Prosthetic Upper Limb

- Application no – 202221001156. Status- Published in official journal of the patent office. Application awaiting examination.

Design registration – Prosthetic Limb

- Application no – 356336-001. Status- Granted.

ACHIEVEMENTS

April 2023

ROBOFEST 3.0 (Organized by Gujarat Council on Science and Technology, India)

- Qualified for level 2 in the category of Swarm Drone.
- Received 50,000 INR for proof of concept.

April 2022

ROBOFEST 2.0 (Organized by Gujarat Council on Science and Technology, India)

- Winner in the category of Prosthetic limb with remote sensor. (Link)
- Received prize of 6,50,000 INR.

DEC 2021

Internship carnival AWADH

- Winning team in internship carnival 2021, offered R&D position at IIT ROPAR withfunding of 10,00,000 INR.

CERTIFICATIONS

- Course on Automation in Manufacturing by NPTEL (Link)
- Course on Machine Learning A-Z™ Hands-On Python & R In Data Science by Udemy
- Course on Python for Data Science and Machine Learning Bootcamp by Udemy
- Course on 3D printing capstone (specialization in 3d printing) by Coursera
- Course on Digital Manufacturing & Design Technology Specialization by Coursera

SKILLS

LANGUAGE SKILLS English (Advanced, C1), Hindi (Intermediate, A2), Gujarati (Native), German (A1)

PROFESSIONAL SKILLS Fusion 360, OpenCV, MATLAB/Simulink, Python, C, ROS, Mechanical design, Arduino,IoT