PRANJAL PAUL

M.Tech. Automation & Robotics Engineering

paulpranjal1908@gmail.com
19th August 1996
Sai Nagar, Jail Road, Raipur- C.G., India
(+91) 97556-76500, (+91) 89623-16306
(+91) 83848-05339
https://www.linkedin.com/in/reach-pranjal/
https://github.com/reachpranjal
https://reachpranjal.github.io
www.facebook.com/pranjal.paul.188
https://twitter.com/reachpranjal

QUALIFICATION

Course	Institution	Board/University	Percentage/GPA	Year of passing
M.Tech. Automation and Robotics	University of Petroleum and Energy Studies, Dehradun	UPES, Dehradun	9.56	2019-2021 (Pursuing)
B.E. Electronics and Telecommunication	Bhilai Institute of Technology, Durg	CSVTU, Bhilai	8.31	2017-18
10+2	Delhi Public School, Raipur	CBSE	73%	2014
10th	Delhi Public School, Raipur	CBSE	8.6	2012

CERTIFICATES

- Autonomous Mobile Robots from ETH Zurich offered by edX in July 2020
- Introduction to TensorFlow, AI, Deep Learning from IBM offered by Coursera in April 2020
- Modern Robotics: Robot Motion Planning and Control by Coursera in May 2020
- Robotics: Aerial Robotics offered by Coursera in April 2020
- Robotics: Computational Motion Planning offered by Coursera in April 2020
- Control of Mobile Robotics offered by Coursera in March 2020
- Python Programming & Django Web-framework from Effcon Co., Raipur in the year 2018
- Elite Certificate in Analog Electronics from NPTEL in the year 2016

TECHNICAL SKILLS

Boards	Platforms / Simulators	Languages	Desktop OS
Familiar with Arduino, Raspberry-Pi, Nvidia Jetson Nano, TinyML, LPC2148 Arm 7	Gazebo, V-rep, CoppeliaSim, Carla simulators, ROS-Melodic (beginner), Proteus, Multicap	Python, R, C, C++, MATLAB, PHP, CSS, Bootstrap, Json	Linux - Ubuntu (18.04.4, Core, Mate), Raspbian, Tegra (L4T); Windows

PROJECTS

- **Search and Rescue Operation in a disaster affected area** (Current)

  Quadrotor will traverse in an unknown environment generating 3D map using Kinect sensor and would search for victim using Simultaneous Localization and Mapping Algorithm. As soon it finds, it will communicate to Mobile robot for rescue operation.

- **Image Processing based Bio-degradable and Non-biodegradable Waste Separator Bin using HAAR Transform** **(**Nov 2019 – Feb 2020)

  The waste is detected as bio or non-biodegradable waste using RPi compatible camera. Dustbin separates the waste accordingly with the help of single servo motor. It is mainly made for college/schools. The model was trained using CNN for plastics, papers, and metals, and could achieve an accuracy of 91%.

- **Fresh and Decayed Fruit Classifier using CNN** (Oct 2019 – Feb 2020)

  A Convolutional Neural Network based fruit quality classifier that separates them as fresh or decayed based on their geometrical features like size, shape, colour, texture. The model reaches 94% accuracy for test data and uses flask for the deployment.

- **Self-Driving Car based on Lane Detection** (Dec 2019 – Jan 2020)

  The car moves at the centre of tracks having white lanes. When it detects the lane end, it takes U-turn and goes back to the starting place. It is built on Arduino and Raspberry Pi 4 with Pi camera and obstacle avoidance. Additionally, it recognizes traffic signals.

- **ML based Line follower built for visually-impaired people** (June 2017 – Sep 2018)

  The special abled person is guided towards respective hospital ward based on bluetooth input. It drives using RFID with line following with the application of machine learning. Laser Stop-Detection was the further modification made over RFID for precise stop-detection.

PUBLICATION

- Pranjal, G. Venkata and Arpit J. (under review) "*Path planning and Optimization*". Opportunities and Challenges in Internet of Things and Cyber Physical Systems. Apple Academic Press (2020).
- Pranjal, Abhishek S. (under review) "*A comprehensive review on navigation system, design and safety issues for autonomous vehicle development*". ADDAS-1: Autonomous Driving and Driver Assistance System. CRC Press (2020).

ACHIEVEMENTS

- Winner in Hackathon conducted by Effcon Company, Raipur in the year 2018
- Qualified GATE (EC) in the year 2018
- Secured 2nd position in Biped Robot Mega Competition organised by Robokart in association with Innovation Cell UMIC, IIT Bombay in the year 2017
- Qualified Regional Maths Olympiad in the year 2013

ACTIVITIES AND SOCIETIES

- Contributor of GitHub Research India Organization
- Google Developer Group Member
- Attended seminar on Node-JS conducted by Texas Instruments in the year 2016.
- Attended workshop on Internet of Things conducted by Blue Banyan in the year 2015
- Attended seminar on BITCON conducted by BIT, Durg in the year 2015
- Volunteered National Board Accreditation Project Exhibition at BIT, Durg
- Volunteered Induction Program at BIT, Durg
- Co-ordinated Debate Competition at DPS, Raipur

SOFT-SKILLS

- Adaptive
- Collaborative
- Conflict Management
- Communicate with cross-functional team
- Positive Reinforcement

INTERESTS

- Artificial Intelligence
- Machine Learning and Data Science
- Aerial Robotics
- Swarm Algorithms
- Computer Vision
- Image Processing and Cognitive Learning
- Robot Simulation
- Localization and Mapping

LINGUISTIC PROFICIENCY

- English – Full Professional Proficiency
- Hindi – Professional Working Proficiency
- Bangla – Full Professional Proficiency