

Piyush Singh

Mechanical Engineer, Mumbai University

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Summary

A dedicated and self-motivated Mechanical Engineer graduated from Mumbai University, with hands-on experience in developing reinforcement learning model and robots using inverse kinematics. Additionally, have a good understanding in building a formula student car.

Education

**New Horizon Institute of Technology and Management,
Mumbai University – B.E. Mechanical Engineering**

May 2017 – August 2021

Bachelor of Engineering (B.E.): 7.68 CGPA

Flora Dale School, Delhi, India – Class 12th

Graduated 2016

Result: 77.4 %

DAV Public School, U.P., India – Class 10th

Graduated 2014

Result: 7.4 CGPA

Projects

Quadruped Robot with 12 DOF – 2021

Role: Project Head

- Strategized, designed and fabricated a quadrupedal robot using SolidWorks
- Reduced the weight of the version 2.0 in 14 days
- Designed electronic schematics of the robot
- Manufactured the robot body using FDM 3D Printer
- Soldered and assembled all the parts together
- Programmed the robot using C based on the mathematical concepts like inverse kinematics
- Incorporated wireless control through multi-threaded programming in python by using Xbox controller
- Project Link: <https://www.piyushsingh.in/PSybeR-Cat>

3D Printer – 2021

- Assembled FDM 3D printer
- Installed and updated the firmware of the 3D printer

Quadruped Robot with 8 DOF – 2019

- Assembled the quadrupedal robot using Arduino Nano
- Programmed the robot using C
- Integrated IR remote sensing for wireless control
- Implemented Reinforcement Learning to avoid obstacles using Ultrasonic sensor
- Project Link: <https://www.piyushsingh.in/Spider>

Links

Website: [//piyushsingh.in](http://piyushsingh.in)

LinkedIn: [//piyushsinghofficial](http://piyushsinghofficial)

Github: [//piyush.singh.office](http://piyush.singh.office)

Soft Skills

- Project Management
- Multi-tasking
- Goal-oriented
- Creative
- Adaptable

Technical Skills

Programming Languages:

C/C++, Python, JavaScript

Web:

HTML, CSS, ExpressJS, Bootstrap, Flask,
Heroku, Docker, NodeJS, npm

Analytics:

MongoDB, Excel

Software and Systems:

AutoCAD, PTC Creo, SolidWorks, Ansys, Linux,
Cura

Tools:

Git, Selenium, NumPy, Matplotlib, Pandas,
Jupyter Notebook, Multi-Threading

Manufacturing:

FDM 3D Printing, Lathe Machining, Drilling,
TIG Welding

Achievements

- Won “Bronze Medal” by NSO for National Science Olympiad in December- 2014
- Achieved 18th Rank in the FSAE Combustion quiz competition
- Organized an industrial visit at Ordnance Factory in Ambernath

Formula Student Race Car – January 2019 to March 2020

Role: Founding Member

- Co-Founded Society of Automotive Engineers (SAE) club at New Horizon Institute of Technology and Management
- Led the sponsorship department and supervised the members for bringing more sponsors
- Brought sponsors for monetary support, material and fabrication processes
- Co-operated in recruitment of the team members
- Led the steering department and guided the department members for a better execution
- Planned, designed and created the steering system of the Formula Student car for the NH Motorsports team
- Aided in assembling all the parts to build the formula student race car
- Project link: <https://www.piyushsingh.in/Formula-Student-Car>

Internships

Western Railway, Mumbai – In-Plant Trainee

2 Weeks, December 2019

- Observed the day-to-day maintenance processes at the western railways.
- Delivered a well-documented report to the higher authorities.

Larsen & Toubro Defence, Mumbai – Project Management Intern

Jun 2019 – July 2019

- Worked on hydraulic systems for defence projects
- Assured quality of different materials for turret systems
- Created Bill of Materials (BOM) using MS Excel by reading CAD drawings.
- Coordinated internal resources and vendors for flawless execution of projects.

Workshop Details

- Attended 2-day workshop at IIT Bombay on topic “Machine Learning” from 24th to 25th August 2019.

MOOC Certificates

- Getting Started with Python / University of Michigan / Coursera
- Python Data Structures / University of Michigan / Coursera
- Data Science Ethics / University of Michigan / Coursera
- Introduction to Big Data / University of California / Coursera
- AI for everyone / Deeplearning.ai / Coursera
- Machine Learning: Regression / University of Washington / Coursera
- Network Security & Database Vulnerabilities / IBM / Coursera

Extracurricular Activities

- Created a personal website by using web technologies such as Docker, ExpressJS, etc.
- Completed 2-year course in Indian classical singing from Akhil Bharatiya Gandharva Mahavidyalaya
- Won Mr. Fresher 2017 at New Horizon Institute of Technology and Management, Mumbai University