

PRADYUMN TIWARI

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EDUCATION

MS, Robotic Systems Engineering, RWTH, Aachen	2.8	2023 - Present
B.Tech, Mechanical Engineering, RTU, Kota	2.0	2016 - 2020

EXPERIENCE

Project Scientist Aug 2021 - Feb 2023
DTFE, IIT Delhi *New Delhi, India*

- Designed and developed two Autonomous Mobile Robots using **Solidworks**, **ANSYS** and successfully improved the robot traction by **20 %** from the previous iterations.
- Used **Python**, **MATLAB**, **C++** for the Kinematic Calculations and PID Control of the robots.

Senior Project Assistant (Tech) Feb 2021 - Aug 2021
DESE, IIT Delhi *New Delhi, India*

- Designed and assembled the plant using **AutoCAD Mechanical**, **Solidworks** and successfully delivered the complete assembly.
- Managed the successful installation of a Plasma Pyrolysis Plant and handled the administrative work on behalf of IIT Delhi.

PROJECTS

Sign Language Detection using Action Recognition Developed an innovative sign language detection system. The project included extracting keypoints using **MediaPipe Holistic**, building and training an **LSTM**-powered deep neural network with **TensorFlow** and **Keras**, and implementing real-time sign language prediction from video sequences.

Tech used - Python, TensorFlow, Keras, MediaPipe, Long Short-Term Memory (LSTM) Networks, Deep Learning

Deep Face Detection Model Implemented a face detection model using **TensorFlow's object detection architecture**. The project covered **image collection and annotation**, data partitioning and **augmentation**, model building, **training** and **real-time detection**.

Tech used - Python, TensorFlow, OpenCV, Labellmg, CNNs

Autonomous Mobile Robot Developed an Autonomous Mobile Robot (**Robomuse 6**) under the supervision of Prof. S.K. Saha and Prof. S.M. Ishtiaque at IIT Delhi. Performed **LiDAR** sensor integration, **Sabretooth Motor Driver** configuration, **Autonomous Navigation Stack** implementation using **ROS1**, **RViz**, **Gazebo** and **MoveIt**.

Tech used - Python, C++, ROS1, Arduino, Linux, Gazebo, MoveIt, RViz

TECHNICAL SKILLS

Programming Languages:	Python, C++, C, SQL, MATLAB
Frameworks:	PyTorch, Scikit-learn, TensorFlow, Keras, OpenCV, Huggingface
Data Science:	Pandas, NumPy, Matplotlib, Seaborn
Robotics Skills:	ROS, Gazebo, RViz, MoveIt, MATLAB, MuJoCo
CAD Skills:	Solidworks, Fusion 360, AutoCAD, ANSYS, CATIA V5
Developer Tools:	VS Code, Git, Docker, Linux, Jupyter Notebooks
Languages:	German, English, Hindi

ACHIEVEMENTS & AWARDS

- Awarded a **full scholarship** for an **MS** at **RWTH Aachen University, Germany**, and a **research internship** at the **University of Dundee, UK**, in recognition of **academic excellence**.
- Served as a **Team Leader** at **AIESEC** and **VP Membership** at **Toastmasters International**.
- Hosted** multiple **National/International technical conferences** and events.