

Harsh Mittal

Software Team Lead

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WORK EXPERIENCE:

Senior Software Developer – SL

Brane Enterprises Pvt Ltd

Hyderabad, India

Nov 2021 – Present

- Leading a team of **13 members** consisting of Developers, Designers and Testers.
- Developed **5+ Customized Ground Control Stations (GCS)** for the **Indian Army, DRDO, and Indian Government**.
- Spearheaded GCS for High-Speed Swarm Drones (40m/s), High Altitude Foldable Surveillance Drones (~7000 Feet), and Swarm Hybrid drones that can Roll and Fly(Range: 300m).
- Planned and developed end-to-end **FullStack Architecture** for the **Robotics Platform** from scratch, decreasing operational cost by 50%.
- Created In-house **DGCA Certification tool** and tamper-proof Firmware, reducing cost by 90%.
- Developed on-board **AI capabilities** like Humand, Vehicle Tracking, and Precision Landing (95% Accuracy).
- Optimized Swarm communication using relay systems and implemented low-latency video transmission.
- Handled Client Demos and went as a Forensic Expert for NIA(National Intelligence Agency).

Computer Vision Engineer

Asteria Aerospace

Bengaluru, India

July 2020 – Nov 2021

- Worked on a **360-degree obstacle avoidance** drone using onboard AI capabilities.
- Researched and implemented in-house Precision Landing using Computer Vision (90% Accuracy).
- Developed real-time **Digital Image stabilization** for stereo vision using IMU (250Hz).
- Generated different ROS models and environments decreasing testing time by 30%.

Embedded System Intern – GET

CRON AI

Gurugram, India

July 2020 – Nov 2021

- Coded an application to visualize point cloud of different LiDAR and have written an algorithm to detect intrusion using raw data with 400Hz, **patent** in process.
- Developed robust middleware between Embedded devices, LiDARs, Cameras, and different sensors; enhanced system reliability by 30% and reduced data latency by 50%.

Research Intern

University Putra Malaysia

Seri Kembangan, Malaysia

May 2019 – July 2019

- Home automation** and security using Deep Learning and MQTT using edge computation, improvement of about 40% in performance, and Power Analysis Prediction with 80% Accuracy.

Intern

India Glycols Limited

Kashipur, Uttarakhand, India

May 2018 – July 2018

- Coded 3+ Ladder logic PLC Systems and got practical experience in the chemical industry end to end.

PROFESSIONAL SKILLS

Programming Languages: C/C++, Python, Matlab, ROS, Latex

Software: Qt, ROS, Matlab, Vivado, Premier Pro, QGC, MissionPlanner

Boards: Raspberry Pi, Nvidia Jetson, Arduino, Tiva TM4C123G, Pynq Board

Backend: FastAPI, PostgreSQL, SQL, Docker, MQTT

Soft Skills: Leadership, Management, Self-Learning

Conferences

Pycon India 2023

Hyderabad, India

Oct 2023

- Conducted workshop for "Game Development using Python" for 40+ students. [Workshop Link](#)

HydPy

Hyderabad, India

Nov 2022

- Conducted session on "Leveraging Python in Robotics". [Talk Link](#)

Pycon Sweden 2021

Sweden (Online)

Oct 2021

- Gave Talk on "Building Custom Robot Using ROS". [Talk Link](#)

Pycon India 2020

India (Online)

Oct 2023

- Gave my first online talk on "Home Automation using MQTT, PyQt, and Arduino". [Talk Link](#)

IEEE GCCE 2019

Osaka, Japan

Oct 2019

- Paper on "FPGA Implementation of Handwritten Number Recognition Using Artificial Neural Network" published. [Video Link](#)
[Paper Link](#)

Projects

MultiCopyPaste

- Qt application for Android, Linux, Windows, and Mac used to organize and manage personal and professional data written in C++. Code: [Link](#) Binaries: [Link](#)

Atom Bot – Autonomous Navigation Bot

- Custom robot implemented in ROS and Gazebo used for generating 2D Map of any area. Code: [Link](#)

Code Editor + Game Development

- Created custom Python code editor in PyQt with text highlighting and support for game development. [Code Link](#)

Qt Network Plot

- Developed a robust Custom Plot application in C++ (Qt) to display real-time data with multiple plot configurations, enhancing data visualization capabilities and reducing application memory usage by 50% using Multi-Threading.
[Code Link](#)

Male Female Voice Recognition System

- DSP project for recognizing voices of different genders. Created a GUI application for the same on MATLAB. [Code Link](#)

Martian Robot

- All-terrain robot equipped with a wireless camera, obstacle remover, Atmega 16 micro-controller, and HC-05 Bluetooth module for controlling the robot.

Education

BITS Pilani

Pilani, Rajasthan, India (WILP)

2023 – Present

- M.Tech in Software Engineering – Full Stack Specialization

LNM IIT – LNM Institute of Information Technology

Jaipur, India

2016 – 2020

- B.Tech in Electronics and Communications
- Teaching Assistance in DSA and Electronics Lab

St. Xaviers Sr. Sec. School

Jaipur, India

2014 – 2016

- Science + Economics.