

# RAGHAV PRABHAKAR

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## EXPERIENCE

### Research Assistant - Robotics Research Centre, IITB

📅 January 2023 – Present

- Created a pipeline for generating detailed top-down maps with instance data, enhancing autonomous wheelchair's Visual Language Navigation.
- Engineered a gesture-controlled person-following robot with static obstacle avoidance capability.

### Co-founder - Flowdrive.ai

📅 April 2021 – Present

- Architected and developed an open-source, cross-platform Level 2 Advanced Driver Assistance System (ADAS).
- Led diverse edge device model deployment and directed robust data collection and logging.
- Executed thorough validation of software functionality through meticulous testing within the CARLA simulator framework.

### Data Science Fellow - Fellowship.ai

📅 January 2022 – March 2022

- Conducted Research and Development on Video Classification Models, Pose Estimation, and Video Analytics.
- Contributed to the development of algorithms and tools for analyzing video content, including feature extraction, data cleaning, and visualization.

### Junior Machine Learning Engineer - Omdena AI

📅 June 2021 – August 2021

- Developed and deployed real-time object recognition models to detect buses and OCR models to recognize their license plates.
- Integrated the models into the company's mobile app for real-time bus detection and seat occupancy detection and optimized models for efficient processing and low latency.

### Core Member (ML Team) - Developer Student Chapter(DSC),TIET

📅 April 2020 – September 2020

- Created a pseudo LIDAR system using cameras and deep learning, utilizing DenseDepth for 3D reconstruction from monocular images.
- Deep Learning Based Behavioral Cloning for Self Driving Car Created and trained several different deep learning models for behavioral Cloning.

## PUBLICATIONS

### 📄 Articles

- Nanwani, L. et al. (2023). "Instance-Level Semantic Maps for Vision Language Navigation". In: *ArXiv abs/2305.12363*.

## EDUCATION

B.Tech. (COE), CGPA: 8.50/10

**Thapar Institute of Engineering & Technology**

📅 August 2019 – August 2023

Higher Secondary - 92%

**Central Board of Secondary Education**

📅 2019

Secondary - 10.0 CGPA

**Central Board of Secondary Education**

📅 2017

## TECHNICAL SKILLS

- Python, Java, C, C++, Pytorch, Keras, Ros Navigation Stack
- Machine Learning, Deep Learning, Computer Vision, NLP, Robotics, IoT
- Arduino, Raspberry Pi, Linux, Bash, Git

## PROJECTS

### Face surveillance system for Hostels

- Led the deployment of a full-stack facial surveillance system for monitoring student attendance within hostel premises, successfully managing a scale of 10,000 individuals.

### Nucleus Segmentation From 2D Scans

- This project was an implementation of U-Net from scratch in the Bio-Imaging sector. It was also part of the Kaggle Data Science Bowl 2019. A model with accuracy of 94.3% was made to detect cells and nucleus from scans.

### Painter For Noobs

- It is a website which lets you transform an image into an artstyle and allows you create virtual backgrounds for online meetings. It is based on Neural Style Translation. It was deployed on Web using Streamlit.

### Image Captioning

- Implemented a Deep Learning project utilizing a CNN-LSTM model trained on Flickr30k dataset. Task involved image summarization through caption generation using PyTorch framework.

## ACHIEVEMENTS

- Top 8% in Kaggle Mayo Clinic - STRIP AI Competition
- Finalist in Manthan Cybersecurity Hackathon (Organised by Govt of India) - Deepface Detection Track