Ritik Vaishnav

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EDUCATION

MBM University Jodhpur, 2021 – 2025
B.E. in Electronics & Electrical Engineering

KSLPS Falna, 12th PCM 2019 – 2020

EXPERIENCE

Research Intern, Networks Research Lab IIIT Delhi 06/2024 – present
Working on *'Cloud-Assisted Autonomous Driving over Wireless Network'*
under the guidance of Dr. Arani Bhattacharya Sir.
- Integrated CARLA with FFmpeg for efficient encoding and streaming of video data.
- Deployed teleoperation on the cloud, utilizing keystrokes for real-time vehicle navigation
  with ultra-low latency.
- Optimized PYLOT's Erdos pipeline to enable cloud-based detection using Yolov8,
  improving accuracy in complex scenarios while minimizing network latency.

Mentor, Embedded System & Robotics Workshop 🔗 06/2023 – 08/2023
Shared all what I learnt about Electronics and Programming during my time at ESRC
under the guidance of Dr. Alok Singh Gahlot Sir.

Participant, eYRC'23, E Yantra IIT Bombay 🔗 09/2023 – 01/2024
Worked on the theme 'GeoGuide'
Completed 4 Tasks out of 6 working on the core of ML Algorithms, Image Processing,
Remote sensing, GIS, Shortest Path Algorithm, Wireless Communication, Hardware design.

SKILLS

Languages — C, C++, Python

Microcontrollers — RP2040, ESP32

AV Research — CARLA, Pylot, ERDOS

Tools and Technologies — FFmpeg, DaVinci Resolve, KiCAD, Thingspeak, OpenCV, TensorFlow, Ubuntu,
UART, RTSP, WebRTC.

PROJECTS

PaperPerspective 🔗 03/2024
- Implemented Perspective Transformation in real-time, eliminating the need for camera
  or whiteboard setups.
- Utilized **OpenCV** and **pyvirtualcam**.

Autonomous Rover with Real Time Video Feedback 🔗 07/2022
- Integrated an **ESP32 Camera** with a **Raspberry Pi Pico**-driven
  fast line-follower rover.
- Ensured seamless real-time video streaming through a Live Web Server.
- Optimized **PID control** parameters for enhanced accuracy.

POSITION OF RESPONSIBILITY

Coordinator 03/2022 – present
Pixellens: Film & Photography Club MBM University
Led multiple creative projects, focusing on learning and sharing various aspects of
cinematography and editing.

INTERESTS

Research Interests: Embedded Systems, Autonomous Vehicles, IoT devices

Abstract Interests: Filmmaking, Travelling, Music