Darshan Kumar Jajoria

Jaipur, Rajasthan
+91 9672584550 darshankr.jajoria.civ21@itbhu.ac.in linkedin.com/in/darshan-kumar-jajoria-705b47246

Education

Indian Institute of Technology (BHU) Varanasi **Sep. 2021 – May 2025**
Bachelor of Technology in Civil Engineering *CGPA- 9.09*

Bhartiya Navjeevan Vidyapeeth Sr.Sec.School, Jaipur, Rajasthan **2020**
Intermediate *Percentage- 89.80*

Indo Kids Academy, Jaipur, Rajasthan **2018**
High School *Percentage- 82.83*

Technical Skills

Languages & Technologies: Python, SQL, Pandas, NumPy
Area of Interest: Embedded Systems, Computer Vision, Self-driving Technologies, IoT
Interpersonal Skills: Team Work, Problem-Solving, Leadership, Technical Mentorship, Networking

Experience

Rinex **May 2023 - July 2023**
Machine Learning Intern | *Python, SMOTE, Keras, TensorFlow*

- Designed dynamic prediction windows, enabling early intervention and enhancing **student success prediction.**
- Engineered **7** features, refined to **5**, and optimized performance with **SMOTE**, scaling, and correlation adjustments.
- **DNN** performed best(Accuracy **76%**, **F1-score 0.74**) over Logistic Regression, KNN, DT, Random Forest, XGBoost.

Projects

Shivaay Controls | *KiCAD, STM32 CubeIDE* **March 2024**

- Designed the motor controller circuit using **STM32** microcontroller, IR2110 drivers, and IRF1407 MOSFETs.
- Created the PCB layout in KiCAD, ensuring proper placement for efficient power and thermal management.
- Developed motor control firmware with **six-step** commutation, PWM, and speed regulation using hall/encoder signals.
- Tested and optimized performance, fine-tuning parameters for efficiency and reliable operation. (Test Video)

Computer Vision for Autonomous EV | *Python, OpenCV, TensorFlow* **February 2023**

- Developed and fine-tuned **YOLOv5** models for real-time detection, optimizing vehicular perception and navigation.
- Engineered data pipelines using TensorFlow for efficient preprocessing and augmentation of large datasets.
- Developed **DeepLabV3+ with Xception backbone** to enhance road detection and support vehicle path planning.
- Integrated deep learning models with **ROS** for low-latency inference in autonomous cars. (Github)-(Test Videos)

Electric Vehicle Performance Monitoring System | *Arduino IDE, SoftwareSerial.h* **November 2023**

- Developed a real-time monitoring system using **speed and current sensors** to measure key vehicle parameters.
- Transmitted sensor data via Bluetooth to an onboard mobile app designed with MIT App Inventor.
- Designed an **I2C-based** interface for real-time in-vehicle data visualization on a display unit.
- Integrated MQTT protocol in the app to upload performance data to a website for remote monitoring.

Leadership / Extracurricular

Team AVERERA **July 2023 – July 2024**
Project Manager SHIVAAY *IIT (BHU)*

- Managed and supervised the technical development, administration, and finances of a team of 18 active members.
- Secured sponsorship and mentorship from RIGOL Technologies and e-con Systems to facilitate industrial collaboration.
- Enhanced the efficiency of the Urban Concept Vehicle **"SHIVAAY" to 144 km/kWh** on campus roads.

Honours & Achievements

- Secured **1st** Place in **Technical Innovation & Carbon Footprint Reduction** at Shell Eco-Marathon 2025, Qatar.
- Secured **6th** Position in On-track Award with **83.6 km/kWHr** in battery electric category **SEM ASIA 2025**, Qatar.
- Secured **1st** Position in Carbon Footprint Reduction Award at **Shell Eco-Marathon 2023**, organized in Indonesia.
- Secured **6th** Position globally in the Shell Eco-Marathon Autonomous Programming Competition 2023.
- Achieved **SAE level 3** autonomy on Team AVERERA's test vehicle using a **3D-LiDAR** and Pure Pursuit.
- Won **$100** Wild Card Prize at **ALTIRE Global** Student Contest, February 2024.