

# Harshwardhan Fartale

Nagpur, Maharashtra, India

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## Education

### National Institute of Technology, Hamirpur

B.Tech in Electrical Engineering

CGPI - 8.56

Dec 2020 - May 2024

### Yashoda High School and Junior College

HSC - Higher Secondary Education

Percentage - 80%

May 2017 - May 2019

### Somalwar High School, Ramdaspath

SSC - Secondary School Certificate

Percentage - 96.4%

Apr 2014 - Apr 2017

## Work Experience

### DRDO & (IISC) Indian Institute of Science, Bangalore

Predoc Associate

July 2024 - Present

- Leading Open Source Projects at **AiREX (AI for Research and Engineering eXcellence)** lab under **Professor Sashikumaar Ganesan**
- Developing comprehensive Machine Learning (ML) systems for CASDIC's (Combat Aircraft Systems Development & Integration Centre) combat aircraft applications

### Bajaj Finserv Health

Data Scientist

Jan 2024 - June 2024

- Designed and implemented a high-performance statistical model for fraudulent transaction prediction, achieving the highest abuse detection rate among all models

### OpenMined

Open Source Technical Writer

Jan 2023 - June 2023

- Collaborated with the writing team to improve existing user documentation and beginner tutorials in differential privacy
- Active technical writer and contributor, publishing blog posts and articles about federated learning and privacy-preserving machine learning resulting in increased product adoption.

### IIT Indore

Machine Learning Intern

June 2023 - July 2023

- Developed ML models predicting stock prices using Python, achieving 85% accuracy. Incorporated news and market data to improve forecasts.
- Implemented time series analysis and feature engineering, boosting model accuracy by 25%. Enabled data-driven decision making
- Collaborated with Professor Vimal Bhatia on applying advanced techniques like RNNs for real-time forecasting

## Key Projects

### Document Tampering Detection using YOLOV8

Self Project

- Developed a comprehensive forgery detection system with YOLOV8 to identify and classify fraudulent alterations such as **overwriting**, **scribbling**, and **whitener** use, alongside building an extensive dataset of over 600 document images to train the model for accurate manipulation detection.
- Designed a **Streamlit-based** web interface facilitating intuitive document uploads, enabling users to visualize tampering and analyze detailed results of digital forgery assessments.

### Fundus AI

Guide - Dr. Amit Kaul

- Developed a Complete end-to-end solution to detect eye as well as systemic diseases such as **Diabetic Retionpathy**, **Cataract**, **Glaucoma**, **ARMD**, **Hypertensive Retinopathy**
- Developed deep learning smartphone app for efficient ophthalmic disease screening utilizing device camera for accessible healthcare
- Designed 3D-printed smartphone accessory for capturing high-quality fundus imaging compatible with all smartphones and the application
- Technologies used:** Python, Keras, Tensorflow, Flutter

## Skills

**Languages** Python, C++, SQL, Solidity

**Python Libraries** NumPy, pandas, Matplotlib, Scikit-learn, JAX, OpenCV, spacy, YOLOV8

**Deep Learning** Tensorflow, Pytorch, PySyft, OpenCV, Neo4j

**Other Softwares/Platforms** LaTeX, MATLAB, Linux Kernel, Google Cloud Platform, Firebase, Adobe Illustrator.

**Technical Writing** LLM-Blog, Medium, Hashnode

## Positions of Responsibility

### Joint Secretary

Indian Society for Technical Education

NIT Hamirpur

June 2023 - May 2024

### Secretary

Hult Prize 2023 NIT Hamirpur

NIT Hamirpur

Oct 2022 - March 2023

### Cloud Facilitator

Google Developer Students' Club

NIT Hamirpur

June 2021 - Dec 2022