

Prajwal Kulkarni

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EDUCATION

KLS Gogte Institute of Technology

BE in Electronics and Communication | GPA: 8.98

Belagavi, Karnataka

2022 – 2026

Govindram Seksaria Pre-University College

Score: 92.83%

Belagavi, Karnataka

2020 – 2022

EXPERIENCE

Tech Fortune Technologies

Data Science Intern

Jan 2026 – May 2026

Bengaluru

- Built a multi-vehicle tracking REST API using FastAPI and YOLOv8n, maintaining persistent object identities across occlusions (up to 5 missed frames) by implementing SORT (Simple Online and Realtime Tracking).
- Improved real-time cloud processing speed on Hugging Face Spaces by bypassing YOLO detection on 50% of frames via Kalman predictions, utilizing FP16 inference, and encoding WebM streams.
- Conducted workshops and classes on Machine and Deep Learning for 100+ BE/BCA/Diploma students.

Department of Neurosurgery, AIIMS

Research Intern

May 2025 – Sept 2025

New Delhi

- Built a multi-agent AI system using Llama vision language models and Visual RAG to automate surgical suturing evaluation. Curated a 514-image dataset, achieving an RMSE of 2.2/10 against surgeon annotations.
- Deployed a Python/PyQt5 computer vision application with multi-threaded OpenCV live feeds for real-time craniotomy scoring. Integrated a Grad-CAM pipeline to visually highlight spatial drilling performance.
- Configured 3 ESP32S3 controllers for a wearable device to study hand-eye coordination during endoscopy.

PROJECTS

Medical Model Calibration [GitHub](#)

- Engineered an end-to-end deep learning framework with 180 experiments across 5 medical datasets to analyze the effect of train-time regularization (auxiliary loss) against post-hoc calibration techniques.
- Results indicate standard post-hoc methods worsen reliability in 78.3% of cases due to overfitting. In contrast, FL + MDCA loss combination yields a peak 97.86% accuracy with low calibration error.
- Technologies: Python, PyTorch, TorchVision, OpenCV, Scikit-Learn

Real-Time Industrial Posture Analysis System [GitHub](#)

- Trained a SE-STGCN model to identify injurious poses of workers using 3D skeletons obtained by extracting 6-channel tensors (position and velocity) from the CarDA dataset, achieving an accuracy of 94.6%.
- Deployed a PyQt6 edge-client utilizing binary WebSockets and implemented OneEuroFilter signal smoothing, viewpoint invariance, and EAWS-based safety alerts, with <10ms end-to-end latency.
- Technologies: Python, PyTorch, MediaPipe, FastAPI, PyQt6, WebSockets

TECHNICAL SKILLS

Programming Languages: Python, C/C++

AI/ML: PyTorch, Hugging Face Transformers, OpenCV, Scikit-Learn, NumPy, Pandas

Development: Linux, Git/GitHub, Docker, FastAPI

ACHIEVEMENTS & CERTIFICATIONS

Graphics and Vision Summer School 2024 IIT Delhi

May 2024 – June 2024

Deep Learning (Top 1% | Elite + Gold) NPTEL

Machine Learning Specialization Coursera