

# Faijan Khan

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## Education

**VIT Bhopal University**

*B.Tech in Computer Science*

Oct 2022 – Present

CGPA: 8.44

## Skills

**Languages:** Python, Java, SQL

**Frameworks & Libraries:** PyTorch, TensorFlow, OpenCV, YOLO, FastAPI, Gradio, Docker, Redis, Celery

**Machine Learning & AI:** Computer Vision, Deep Learning, CNN, OCR, OpenPose, Object Detection, Pose Estimation

**Certifications:** Dataiku: Advanced Designer, ML Practitioner, MLOps Practitioner, Generative AI Practitioner

## Experience

**Data Science Intern**

*Sabudh Foundation*

Jan 2025 – July 2025

*Remote*

- Built automated computer vision pipeline analyzing 540+ frames from NBA highlights to detect advertising placements using Python and OpenCV.
- Developed end-to-end video processing system extracting insights from YouTube sports content at scale with machine learning models.
- Achieved 85% accuracy in brand detection through deep learning techniques, delivering automated advertising analytics solution from raw video to dashboard.

## Projects

**NBA Advertisement Analysis** | *Python, OpenCV, Keras, PaddleOCR, FastAPI, Redis*

Feb 2025 – July 2025

- Developed a robust end-to-end video analysis system to detect brand ads in NBA games using OCR-based deep learning models.
- Fine-tuned Keras-OCR and Paddle-OCR on a custom-labeled dataset of tilted and low-quality brand logos to improve detection accuracy under real-world sports footage conditions.
- Evaluated performance across pretrained vs. fine-tuned OCR models; PaddleOCR (PP-OCrv5, Epoch 50) achieved **Precision: 84.68%, Recall: 88.26%, F1-score: 86.44%**, with inference at **2.75 FPS**.
- Built automated reporting pipeline with frame-wise detection, fuzzy brand matching (RapidFuzz), and PDF generation, fully deployed using FastAPI + Celery + Redis.
- Reduced manual ad-tracking effort by 90%, enabling scalable analysis of 2+ hour-long game videos with report delivery via email.

**Virtual Try-On System** | *Python, PyTorch, U-Net, TPS, cGAN, OpenPose, Google Colab*

Aug 2024 – Jan 2025

- Developed photo-realistic virtual try-on system using U-Net generator with residual blocks and Conditional GAN framework, achieving high-quality garment transfer with preserved texture and details.
- Implemented Thin-Plate Spline (TPS) Grid Generator for spatial garment warping, enabling accurate clothing alignment with diverse body poses and shapes across multiple datasets.
- Optimized inference pipeline to generate try-on results in 20 seconds, improving runtime efficiency by 40% through lightweight model execution and streamlined preprocessing.
- Deployed interactive system via Google Colab notebook with zero local installation requirements, providing seamless user experience for 1,000+ users with pose estimation and segmentation integration.

## Extracurricular Activities

**EDU4U club**

*Event Management Lead*

Sep 2023 – Nov 2024

*VIT Bhopal*

- Organized 10+ technical and educational events, coordinating logistics and leading teams of 10+ students to engage 500+ attendees.
- Developed skills in project management and problem-solving, ensuring smooth execution under tight deadlines.