

JAYANT PATEL

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INTERNSHIP

IIT Jammu

Research Intern

February 2024 – July 2024

Jammu, Jammu & Kashmir

- Researched and evaluated various YOLO models (v3-v8) for Personal Protective Equipment (PPE) detection on the CHV Dataset.
- Assessed and optimized a YOLOv8n model, achieving an **80.95%** reduction in model size and an **83.75%** reduction in parameters.
- The compressed model maintained high performance, with only a minimal drop of **3.18%** in precision, **5.71%** in recall, and **3.60%** in mAP@50 compared to the baseline YOLOv8n.

Iron Willed Tech Ltd.

Software Developer Intern

January 2025 – June 2025

Remote

- Engineered core UI/UX features from the ground up for a new lifestyle fashion app, using Kotlin and Jetpack Compose to establish a modern and responsive user interface.
- Implemented the client-side integration of Firebase APIs for essential functions like user authentication and dynamic content, building the app's foundational data communication layer.
- Spearheaded a proof-of-concept feature by integrating Google's MediaPipe ML model to generate real-time face meshes, exploring its use for virtual try-on technology.
- Developed a scalable codebase using Clean Architecture and Clean Code principles, while preparing it for launch through robust error handling and agile development processes.

PROJECTS

Text Behind Photo | Python, FastAPI, React, ML (YOLOv8, SAM), CV | [live demo](#)

May 2025

- Developed a web application enabling text layering on images via a 2-stage ML pipeline (YOLOv8 detection, SAM segmentation) achieving an estimated **98%-99%** person segmentation accuracy.
- Engineered a Python FastAPI backend with RESTful APIs to serve ML models, process images, and deliver segmented foreground/background layers.
- Built an interactive React SPA featuring real-time canvas rendering and a toolbar for **8** text customizations (font, size, color, position) across multiple text elements.

AI-Powered Book Reading Attention Monitor | Python, PyTorch, OpenCV, YOLO, L2CS | [link](#) January 2025 - May 2025

- Engineered a real-time system to monitor reader's visual attention using webcam feed, integrating L2CS for gaze estimation and a custom-trained YOLOv12s model for book detection (open/closed states).
- Developed a custom book detection model (YOLOv12s) by curating a dataset (Roboflow Universe + self-captured images), achieving an mAP of **0.87** on the validation set for book presence and state.
- Implemented a core attention analysis module determining user focus by correlating 3D gaze vectors with detected open book locations using ray-book intersection logic, processing at **25 FPS** on GPU.

PUBLICATIONS

Development of Mobile Application for Sickle Cell Anemia Treatment Support System, YMER, Volume 23, Issue 06, June 2024. | [link](#)

EDUCATION

University Teaching Department (CSVТУ) | CGPA (current): 8.33/10

B.Tech (Honors) in Computer Science Engineering (Artificial Intelligence)

(Expected) July 2025

Bhilai, Chhattisgarh

Sarvodaya Sr. Secondary School Ranpur | Percent: 75%

12th Grade

March 2020

Kota, Rajasthan

St. Thomas Public School Dipka | Percent: 86.66%

10th Grade

March 2018

Korba, Chhattisgarh

SKILLS

Languages: Python, Kotlin, SQL

Developer Tools: VS Code, Android Studio, Google Colab

Technologies/Frameworks: Machine Learning, Linux, GitHub, Flutter, Android, Docker, Firebase, Anaconda, Object Detection