



Vinay Kumar Verma

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Education

Indraprastha Institute of Information Technology, Delhi PhD Scholar, Human Machine Interaction Lab (CSE) 2024 - Present	CGPA: 8.54 (Till 2 nd semester)
Indraprastha Institute of Information Technology, Delhi M.Tech Research (CSE) Thesis: Localized Perception for Constrained Vision Systems (ICASSP) 2024 - Present	CGPA: 8.54 (Till 2 nd semester)
Indraprastha Institute of Information Technology, Delhi PG Diploma (Data Science and Artificial Intelligence with IBM) 2022 - 2023	CGPA: 9.17
ADGITM, GGSIPU, Delhi B.Tech (ECE) 2016 - 2020	CGPA: 7.79

Skills

Programming:	Python, C++, Java, Go, Node.js, Flask, Git, Kubernetes, Docker
ML-DL Frameworks:	PyTorch, TensorFlow, OpenCV, ONNX, Triton Inference Server
Cloud/Edge:	Nvidia Jetson (Nano, Orin), AWS, GCP, Azure, Raspberry Pi
Technical Electives	Digital Image Proc.(8/10), Computer Vision(8/10), Deep Learning(8/10), Artificial Intel.(7/10), Object Oriented Programming(7/10), Research Method.(10/10)

Work Experience

Research Scholar (Advisor Dr. Jainendra Shukla) IIIT Delhi, India	(Jul, 25 - Present)
<ul style="list-style-type: none">• Researching Explainable AI and Computer Vision for healthcare applications.• Developing multimodal AI systems for early autism detection.• Collaborating with AIIMS New Delhi for clinically usable solutions.	
Researcher (Advisor Prof. A.V. Subramanyam) IIIT Delhi, India	(Oct, 23 - Jul, 25)
Focus: Efficient Large Image Segmentation for 3D Medical, Satellite Imaging (Jetson) <ul style="list-style-type: none">• Developed segmentation algorithms for large satellite and volumetric medical datasets.• Presented at ICASSP 2025, Hyderabad (Paper: Resource-Efficient Perception).• Designed efficient 3D segmentation pipelines for memory constraints on edge platforms.	

Computer Vision Engineer 2 (Nov, 22 - Nov, 23)
Stats Perform, London, UK [Remote]
Focus: Real-time football analytics & player tracking for live broadcasts

- Improved player tracking accuracy from 85% → 98% using temporal smoothing
- Designed robust Jersey OCR (TensorFlow), achieving 90%+ accuracy in live scenarios.

Machine Learning SDE - 1 (Apr, 22 - Nov, 22)
Fynd - Shoppersense Retail (Reliance), Mumbai, India
Focus: High-traffic computer vision APIs for e-commerce

- Built CV APIs (e.g., OCR, smart crop, shadow removal) handling 2.5M+ req/day.
- Deployed models via Kubernetes, with Pub/Sub queue for bulk async processing.

Senior Computer Vision Engineer I (Aug, 19 - Apr, 22)
Wobot Intelligence, Gurugram, India
Focus: Surveillance AI and video analytics across multi-camera systems (300+ CCTV Cams)

- Designed multi-camera vehicle tracking for retail & drive-through analytics.
- Built lighting-invariant color detection algorithm for CCTV, achieving 95%+ real-world accuracy.

Projects

CVPR 2025: Foundation Models for 3D Biomedical Image Segmentation (Apr, 25)

- Developed architecture to create universal 3D segmentation foundational model.
- Boosted ultrasound dice score from 0.30 → 0.70. Ranked 5th out of 210 global entries.

Vehicle Speed Estimation - Homography (Apr, 25)

- Designed lightweight system for estimating real-time vehicle speed on campus CCTV.
- Useful for low-resource pipeline suitable for smart fines and alert systems.

Tex-Tractor - Live Text Searching in Videos (Nov, 24)

- Real-time text detection & OCR system from live camera feeds with 95% accuracy.
- Keywords: Motion detection, OCR, OpenCV.

Face Features Based Shopping Site (Jan, 24)

- Created recommendation system to suggest gifts based on recipient facial features.
- Keywords: TensorFlow, Keras, OpenCV, Flask, MTCNN, VGG-Face.

Publications

- **Resource-Efficient Perception for Vision Systems** [Link](#)
 - A. V. Subramanyam, N. Singal and V. K. Verma, "Efficient Localized Perception for Resource-Constrained Vision Systems," ICASSP 2025 - 2025 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), Hyderabad, India, 2025, pp. 1-5, doi: 10.1109/ICASSP49660.2025.10888483
 - Optimized computer vision for embedded/edge systems under resource constraints.
- **Medical Face Identity** [Link](#)
 - V. K. Verma, V. Kansal and P. Bhatnagar, "Patient Identification using Facial Recognition," 2020 International Conference on Futuristic Technologies in Control Systems & Renewable Energy (ICFCR), Malappuram, India, 2020, pp. 1-7, doi: 10.1109/ICFCR50903.2020.9250002.
 - Used facial features to assign unique patient IDs, improving hospital workflows

Awards and Achievements

- Judge & Mentor, Smart India Hackathon 2024, ISRO Nodal Centre, Gujarat
- Judge, Toycathon India 2022, Delhi
- JK Pal Best Student Award – IEEE Delhi Section (2021)
- Winner – Smart India Hackathon 2018, CSIR Pune (Dengue Prediction App)
- Vice Chair – IEEE NIEC (Organized 10+ workshops and SIGs)

Interests and Hobbies

- Astronomy, Astrophotography, AI in Space Imaging, Long Exposure Photography

Declaration: The above information is correct to the best of my knowledge.

Vinay Kumar Verma

Date: October 26, 2025