Ashish Sethi

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Summary

AI/ML Engineer with 5+ years of experience developing and deploying computer vision models that serve 100K+ vehicles daily.

Deep expertise in optimizing neural networks for edge deployment with 30-50% efficiency improvements over industry standards.

Innovator with patented technology in AI-based video compression, reducing data transfer costs by half compared to H.264.

Experience

LightMetrics Technologies June 2020 – Present

Staff Engineer – AI/ML *Bengaluru, India*

Generative AI Video Compression (Patent Filed)

- Designed and developed an end-to-end video compression pipeline using generative AI techniques, achieving 50% better compression ratio than H.264 standard while maintaining comparable visual quality.
- Implemented real-time encoding/decoding algorithms optimized for edge devices, reducing bandwidth requirements by 40% for over 20,000 connected vehicles.
- Filed patent for novel neural compression technique that adaptively balances quality and compression based on scene complexity.

Face Detection & Analysis System

- Led development of production-grade face detection system deployed on 100,000+ vehicles, achieving 84% mAP on challenging in-vehicle scenarios while optimizing for low-power edge devices.
- Successfully deployed model on Qualcomm SNPE with 3x faster inference than previous solution while maintaining accuracy.
- Designed mask-aware detection architecture that maintained 90% of baseline performance during COVID pandemic.

Head Pose Estimation

- Reduced mean absolute error from 9.7 to 1.4 by implementing novel contrastive loss function for driver attention monitoring.
- Developed uncertainty quantification approach reducing false positives by 51%, improving overall system reliability in driver monitoring applications.
- Optimized model for edge deployment with 35% reduction in latency while maintaining accuracy metrics.

Leadership & Collaboration

- Leading research collaboration with IIIT Delhi on federated learning for distributed edge AI systems with privacy preservation.
- Conducted 100+ technical interviews for ML and CV engineering roles.
- Mentored 2 engineers in ML deployment best practices and edge optimization techniques.

DreamVu Inc. Dec. 2017 – June 2018

Applied Computer Vision Engineer *Hyderabad, India*

- Developed novel camera calibration algorithm for omnistereo camera setups, treating each visual segment as a virtual camera with geometric constraints.

Research Internships 2016 – 2017

IIT Guwahati, LV Prasad Eye Institute, University of Delhi *India*

- IIT Guwahati: Implemented object tracking system using HOG features and Random Forest classifier with 78% accuracy.
- LV Prasad: Developed 3D modeling pipeline for medical imaging applications, reducing manual segmentation time by 40%.
- University of Delhi: Created ROS-based indoor mapping system using Microsoft Kinect with 5cm spatial accuracy.

Education

Indraprastha Institute of Information Technology Delhi (IIIT Delhi) — New Delhi, India
M.Tech in Computer Science Engineering, Specialization in AI; CGPA: 8.05/10.00 — *Aug. 2018 – Aug. 2020*

Guru Gobind Singh Indraprastha University — New Delhi, India
B.Tech in Electronics and Communication; Percentage: 77.53% — *Aug. 2014 – Aug. 2018*

Projects

Detecting Malnourishment in Children (Master's Thesis) — Jan. 2019 – Aug. 2020

Created first-of-its-kind dataset of 2,500+ images of malnourished/healthy children in collaboration with pediatricians.

Developed specialized CNN architecture achieving 83% accuracy in classification with limited training data.

Designed and 3D-printed standardized imaging cradle for data collection.

Deepfake Detection — Jan. 2020 – June 2020

Developed metric-based self-attention CNN achieving 90% accuracy on FaceForensics++ dataset, significantly outperforming baseline models by 12%.

NeoNet: Infant Brain MRI Segmentation — Aug. 2019 – Dec. 2019

Built 3D-UNet model for segmenting infant brain MRI images, achieving 87% Dice coefficient on test data.

Reinforced Co-Training — Jan. 2019 – May 2019

Implemented RL-based sample selection for semi-supervised learning, reducing labeled data requirements by 30%.

Technical Skills

Machine Learning/AI: Computer Vision, Deep Learning, Generative AI, Model Compression, Uncertainty Quantification

Edge Computing: Model Optimization, Qualcomm SNPE, TFLite, ONNX, Quantization

Frameworks: PyTorch, TensorFlow, Keras, OpenCV, scikit-learn, scikit-image

Languages & Tools: Python, C++, MATLAB, Git, Docker, LaTeX, pandas, NumPy, Matplotlib

Honors & Awards

Selected for Google AI Research Week Scholar 2022 (Top 150 researchers from India and Singapore).

Quarterfinalist: Texas Innovation Challenge 2016 – *Book Reader for Visually Impaired*

Professional Activities

Volunteer: LatinX 2021 Workshop, ICML 2021

Reviewer: WACV 2020

Instructor: MATLAB + Image Processing workshop for 50 students at HMR College (Aug 2016)

IEEE EPICS project: Automatic Smart Wheelchair

Participant: ABU ROBOCON 2016