Ameya Dhamanaskar

Senior ML Engineer | Scalable AI Systems • Deep Learning • Production ML

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EXPERIENCE

Optum (UnitedHealth Group) Phoenix, Arizona
Machine Learning Engineer *Jun 2023 - Present*

- Architected AI optimization for pharmacy automation across 2,000+ NVIDIA Jetson devices, improving prescription throughput by 25% and reducing fill-time latency.
- Designed scalable computer vision pipelines combining synthetic and real-world datasets, maintaining >98% accuracy under variable lighting and motion.
- Evaluated and deployed real-time detection (YOLOv8) and tracking (DeepSORT) optimized with TensorRT and FP16/INT8 quantization, increasing inference speed by 40% and reducing memory by 30%.
- Containerized inference with Docker for reproducible deployment across Jetson environments, streamlining validation and rollout.
- Mentored 2 junior engineers and led design reviews that improved deployment reliability; drove cross-functional alignment with hardware, compliance, and operations on safety, regulatory, and performance KPIs.

Radius AI Tempe, Arizona
Machine Learning Intern *Sep 2022 - May 2023*

- Enhanced retail product detection using 3D sim2real transfer learning with RetinaNet and Faster R-CNN, achieving a +10 mAP gain while halving inference latency in edge deployments.
- Optimized Region Proposal Networks via pruning and mixed-precision inference, reducing model size and compute cost without accuracy loss.
- Leveraged Segment Anything Model (SAM) for automated labeling, doubling Vision Transformer (ViT) training efficiency and reducing manual annotation workload by 80%.

Institut de Robotica i Informatica Industrial (CSIC-UPC) Barcelona, Spain
Machine Learning Researcher *Oct 2019 - Aug 2021*

- Proposed a self-supervised egocentric 3D pose estimation framework combining first- and third-person cues; improved state-of-the-art accuracy by 12% on a 150k-frame dataset (Pattern Recognition, 2023).
- Built temporal CNN/Siamese architectures enforcing cross-view consistency for accurate 3D reconstruction from 2D keypoints.
- Modeled motion dynamics with encoder–decoder LSTMs to achieve robust 3D joint regression under head movement and occlusion.

Tesco Technologies Bangalore, India
Software Development Engineer *Jun 2018 - Sep 2019*

- Automated remote rebuilds for 50,000+ point-of-sale systems across the UK and Ireland; implemented Bi-Dijkstra and A*-based routing to reduce delivery times by 20%.

EDUCATION

Arizona State University Tempe, Arizona
Masters (Hons.) in Computer Science, GPA: 4.0/4.0 *Aug 2021 - Jun 2023*

BITS Pilani Rajasthan, India
B.E (Hons.) in Electrical and Electronics Engineering *Aug 2014 - May 2018*

PUBLICATIONS

Enhancing Egocentric 3D Pose Estimation with Third Person Views - *Pattern Recognition*, 2023 | (DOI)

PROJECTS

Robustness Analysis of Object Detection Models *(PyTorch)*

- Evaluated YOLOv5 and Mask R-CNN under noise/blur/transformations; findings guided production model selection and augmentation strategies.

Object Detection for Autonomous Vehicles *(PyTorch)*

- Reimplemented Fast R-CNN, YOLOv3, and SSD with anchor-free detection and Soft-NMS; achieved +11% mAP on a KITTI subset.

TECHNICAL SKILLS

ML & CV	Object Detection, Tracking, Segmentation, 3D Pose Estimation, Transformers, Sim2Real.
Frameworks	PyTorch, TensorFlow, TensorRT, ONNX, OpenCV, CUDA, Quantization, Pruning.
MLOps & Deployment	Docker, CI/CD, Model Registry, Monitoring & Observability.
Programming	Python, C++ (Linux/Unix) | Familiar: Java, Matlab.