Ajay Gopi

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Objective

AI researcher with industry experience in production-grade machine learning solutions, aiming to advance representation finetuning and latent space optimization through causality driven research for real-world applications in generative modeling and building robust AI systems in academic or collaborative lab environments.

Education

Rochester Institute of Technology — Rochester, USA
Master of Science in Artificial Intelligence (GPA: 4.0) — *Aug 2026(exp)*

Visvesvaraya Technological University — Bangalore, India
Bachelor of Engineering in Computer Science — *July 2018*

Technical Skills

Operating System: ArchLinux, Ubuntu, Windows
Languages: C++, Python, C
Frameworks & SDK: Pytorch, Keras, TensorRT, Deepstream, Flask, Pandas, Scikit, OpenCV, Git
Certifications: Nvidia Jetson AI Specialist

Research Experience

Computation Biomedicine Lab, RIT — Rochester, USA
Research Assistant, Advisor: Prof. Linwei Wang — *Nov 2024 – Present*

- Conducting an independent study on evaluating existing Deep Causal Diffusion & HVAE generative models on datasets known to exhibiting bias.
- Current Research Interests: Causal Inference, Representation Learning, Mechanistic Interpretability

Professional Experience

Avathon — Austin, USA
AI Architect — *Aug 2019 – Aug 2024*

- Promoted 4 times within 5 years, taking on increased responsibilities in development and leadership roles.
- Designed and built the Visual AI Advisor (VAIA) edge inference pipeline, currently live across 1000+ banking and retail locations.
- Implemented a variation of stacked model inference technique, improving object detection model accuracy by over 20% on downstream tasks.
- Optimized computer vision models for both ARM-based and x86 architectures, improving perforformance and efficiency for edge computing applications.
- Implemented dynamic control logic for several downstream computer vision tasks, including HSE compliance monitoring, footfall recognition, and fire detection.
- Managed and delivered multiple projects, overseeing timelines, gathering customer requirements, and ensuring successful outcomes across diverse computer vision applications.
- Led the implementation of vision analytics to recognize footfall patterns for the largest shopping mall chain in India, achieving over 95% accuracy.
- Developed vision AI solution to enhance surveillance capabilities for one of the world's largest banks.

Entropik Tech — Bangalore, India
Computer Vision Intern — *July 2018 – Jan 2019*

- Contributed to their patented facial coding technology to recognize human emotions and human eye tracking.
- Automated facial action unit (AU) extraction using keypoints obtained from facial landmarks.
- Used support vector machine (SVM) algorithms to classifiy facial action units for human facial expression recognition.
- Introduced tracker based mechanism in the facial coding pipeline leading to reduced inference costs and sped-up the pipeline by 50%

Academic Project

Scene Flow Estimation of Autonomous Vehicles | *Python, Keras, PCL*

- Trained a regression neural network based off of VGG16 for scene flow estimation using 3D Point Clouds.
- Implemented custom data loaders for feeding inputs to the neural network in keras.
- Visualized the obtained point cloud data using point cloud library (PCL).

Relevant Coursework

Stanford 236 Deep Generative Models, Introduction to Causal Inference by Brady Neal, HTM Theory by Numenta