SHUBHAM GAJJAR

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EDUCATION

Northeastern University, Portland, Maine — September 2025 – May 2027
Master of Science in Artificial Intelligence

LDRP Institute of Technology and Research, Gandhinagar, India — September 2022 – May 2025
Bachelor of Engineering in Computer Engineering, Grade Point Average: 8.41/10.0

VPMP Polytechnic, Gandhinagar, India — September 2019 – May 2022
Diploma in Computer Engineering, Grade Point Average: 9.22/10.0

Relevant Coursework: Machine Learning, Deep Learning, Computer Vision, Data Structures and Algorithms, Image Processing

TECHNICAL SKILLS & CERTIFICATION

Programming Languages: Python, JavaScript
Deep Learning: TensorFlow, Keras, PyTorch, CUDA
Computer Vision: OpenCV, Matplotlib, Albumentations
Data Science: NumPy, Pandas, Jupyter, Scikit-learn
Web Development: Next.js, React, JavaScript, Tailwind CSS, Flask
Tools: Git, Vercel, Framer Motion
Certificates: Python for Data Science from Indian Institute of Technology Madras, Python Data Structures from University of Michigan

PROFESSIONAL EXPERIENCE

BigCircle (UPSAAS Technologies LLP), Gandhinagar, India
Artificial Intelligence Engineer — January 2025 – August 2025

- Demonstrated problem-solving by architecting a multi-agent Application Programming Interface system using distributed computing, reducing report generation from 20 to 5 minutes for 10,000+ queries
- Exhibited creativity by engineering pagination and authentication systems for dashboards, accelerating page load times by 80%, and ensuring model deployment stability for 500+ concurrent sessions
- Applied continuous learning to deliver iOS applications using React Native, increasing mobile engagement by 45% within the first quarter
- Collaborated with a 5-member team in Agile sprints; performed code reviews to improve quality metrics by 30%

KEY PROJECTS & PUBLICATIONS

Extended ResNet50 with Inverse Soft Mask Attention for Skin Cancer — Submitted to journal, 2025

- Developed a two-stage pipeline combining U-Net++ hair segmentation with an Extended ResNet50 classifier featuring an Inverse Soft Mask Attention mechanism, achieving 97.89% accuracy on the HAM10000 dataset with 10,015 dermoscopic images
- Applied creativity by integrating dense residual blocks and Squeeze-and-Excitation modules with learnable weighted feature aggregation for hair-occluded and unoccluded regions
- Utilized Nadam optimizer with Cosine Decay Restarts and Sparse Categorical cross-entropy loss, incorporating explainable AI principles ensuring model deployment readiness

Hybrid ResNet-ViT for Skin Cancer Classification — Published in IEEE, 2025

- Designed hybrid architecture combining frozen ResNet50 feature extractor with four-head Vision Transformer blocks, attaining 96.3% accuracy and macro F1 of 0.961 on HAM10000 dataset
- Integrated Global Average Pooling and multi-head self-attention for seven-class skin lesion classification, achieving Area Under Curve of 1.00 across all classes
- Demonstrated communication skills by presenting research at the IEEE World Conference on Applied Intelligence and Informatics to 100+ attendees

VGG16-MCA UNet for Brain Tumor Segmentation — Under Review at Elsevier

- Led innovation by designing a VGG16-based encoder with a multi-channel attention decoder, achieving 99.59% accuracy and 99.71% specificity on the LGG Brain MRI Segmentation dataset from 110 low-grade glioma patients.
- Implemented ensemble learning combining multiple model configurations, improving the Dice coefficient by 3.7% over standard UNet through analytical thinking.
- Used data engineering to create a preprocessing pipeline that removes the MRI artifacts, normalizes image brightness, and resizes FLAIR MRI scans to 256x256 pixels, following ethical guidelines for AI in medicine.

Reinforcement Learning Agent for TrackMania — Academic Project, 2024

- Constructed an autonomous racing agent using Implicit Quantile Networks for distributional reinforcement learning, achieving an 85% track completion rate
- Optimized distributed training framework through problem-solving, reducing training time by 60%