

SHUBHAM GAJJAR

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EDUCATION

Northeastern University, Portland, Maine
Master of Science in Artificial Intelligence

September 2025 – May 2027

LDRP Institute of Technology and Research, Gandhinagar, India
Bachelor of Engineering in Computer Engineering, Grade Point Average: 8.41/10.0

September 2022 – May 2025

VPMP Polytechnic, Gandhinagar, India
Diploma in Computer Engineering, Grade Point Average: 9.22/10.0

September 2019 – May 2022

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

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.

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

Presented at IEEE World Conference, 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

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%