SHUBHAM GAJJAR

Curriculum Vitae

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EDUCATION

Northeastern University, Portland, Maine
Master of Science, Artificial Intelligence, September 2025 – May 2027
LDRP Institute of Technology and Research, Gandhinagar, India
Bachelor of Engineering, Computer Engineering, September 2022 – May 2025, Grade Point Average: 8.41/10.0
VPMP Polytechnic, Gandhinagar, India
Diploma, Computer Engineering, September 2019 – May 2022, Grade Point Average: 9.22/10.0
Relevant Coursework: Machine Learning, Deep Learning, Computer Vision, Data Structures and Algorithms, Image Processing

PUBLICATIONS

2025 Gajjar, S., Rathod, O., Joshi, D., Joshi, H., Barot, V. "Extended ResNet50: Inverse Soft Mask Attention for Skin Cancer Classification." Submitted to journal.

Two-stage pipeline with U-Net++ hair segmentation and Extended ResNet50 featuring Inverse Soft Mask Attention, dense residual blocks, and Squeeze-and-Excitation modules with weighted feature aggregation. Achieved 97.89% accuracy on HAM10000 dataset (10,015 dermoscopic images, seven classes). Nadam optimizer with Cosine Decay Restarts. Conducted 21 architectural trials.

2025 Gajjar, S., Joshi, D., Poptani, A., Barot, V. "VGG16-MCA UNet: A Hybrid Deep Learning Approach for Enhanced Brain Tumor Segmentation in FLAIR MRI." Submitted to *Computers in Biology and Medicine*, Elsevier.

VGG16 encoder with Multi-Channel Attention decoder, skip connections, batch normalization, and dropout. Applied Focal Tversky Loss for class imbalance (tumor regions: 2-5% of image). Ensemble method combining multiple configurations. Achieved 99.59% accuracy, 99.71% specificity on LGG Brain MRI dataset (110 low-grade glioma patients). Adam optimizer with ReduceLROnPlateau and EarlyStopping. Conducted 35 systematic experiments. Preprocessing: skull stripping, intensity normalization, 256x256 pixels.

2024 Gajjar, S., Rathod, O., Joshi, D., Joshi, H., Barot, V. "A Hybrid ResNet-ViT Architecture for Skin Cancer Classification." *IEEE World Conference on Applied Intelligence and Informatics*. Presented December 2024.

Frozen ResNet50 with four-head Vision Transformer, Global Average Pooling, and multi-head self-attention for seven-class classification. Achieved 96.3% accuracy, macro F1: 0.961, Area Under Curve: 1.00 on HAM10000 dataset. Data augmentation: rotation, flipping, brightness-contrast adjustments scaling dataset to 74,353 images. Nadam optimizer (learning rate: 0.001), Sparse Categorical Crossentropy. Split: 70% training, 15% validation, 15% testing.

PROFESSIONAL EXPERIENCE

2025 Artificial Intelligence Engineer, BigCircle (UPSAAS Technologies LLP), Gandhinagar, India

Architected multi-agent Application Programming Interface system using distributed computing, reducing report generation from 20 to 5 minutes for 10,000 plus queries. Engineered pagination and authentication systems for dashboards, accelerating page load times by 80%, ensuring model deployment stability for 500 plus concurrent sessions. Delivered iOS applications using React Native, increasing mobile engagement by 45% within first quarter. Collaborated with 5-member team in Agile sprints, performing code reviews to improve quality metrics by 30%.

2025 Peer Reviewer, *Biomedical Signal Processing and Control*, Elsevier

LANGUAGES

English: Fluent
Hindi: Native
Gujarati: Native

CERTIFICATIONS

2024 Python for Data Science, Indian Institute of Technology Madras, National Programme on Technology Enhanced Learning

2024 Python Data Structures, University of Michigan, Coursera