

Anushka Agarwal

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EDUCATION

University of Massachusetts, Amherst
Master of Science in Computer Science

Sep 2024 – May 2026 (Expected)
GPA: 3.7/4.00

PUBLICATIONS

GenSync: A Generalized Talking Head Framework for Audio-driven Multi-Subject Lip-Sync using 3D Gaussian Splatting.

Anushka Agarwal, Mohammed Yusuf Hassan, Talha Chafekar
CVPR AI4CC 2025.

SKILLS

Frameworks & Libraries PyTorch, Pytorch3D, Genesis, TensorFlow, Keras, Django, Flask, Pandas, Numpy
Skills Generative AI, Machine learning, Multi-modal ML, Large Language Models
ML Natural language Processing, Computer Vision, Vision Language Models, Embodied AI

WORK EXPERIENCE

Flawless AI

June 2025 - September 2025

Research Engineering Intern

- Designed novel audio-driven facial animation (ADFA) models using 3D face models and video diffusion for **multilingual facial animation and speaker style preservation**.
- Enhanced **speaker identity and style preservation** in synthesized animations by integrating **3D Gaussian Splatting** for high-fidelity rendering.
- Developed **custom audio-visual evaluation metrics** to rigorously assess lip-sync accuracy, expression fidelity, and perceptual quality of **3D render outputs**, enabling systematic benchmarking across models.

UMass Amherst (Prof. Chuang Gan)

Mar 2025 – Present

Student Researcher Embodied AI and 3D Scene Understanding

- Conducted research on embodied AI and LLM reasoning for 3D scene understanding, robotic simulation, and video generation.
- Built a world model using video diffusion to support agent navigation in embodied environments.
- Contributed to SpatialVQA, enabling LLMs to reason about spatial relationships in dynamic 3D scenes.

NeuralGarage

Jan 2023 – Apr 2024

Machine Learning Researcher

- Worked with 3D morphable models (FLAME, DECA) to accurately capture 3D face geometry and designed hybrid 2D–3D representations for lip-synced video generation.
- Developed multi-identity Gaussian Splatting methods for generalized reconstruction and disentangled identity representation.
- Optimized model performance by leveraging latent space encoding in an audio-visual cross-attention transformer to reconstruct lip-synced lower-face motion across masked video frames.

PROJECTS

Skin Lesion Segmentation using Deeplab V3 and transfer learning

Designed and implemented a deep learning model for skin lesion segmentation using Deeplab V3 and transfer learning. Pre-processed and augmented large medical image datasets to improve model accuracy and generalization. Utilized transfer learning to improve model performance by adapting pre-trained models to the skin lesion segmentation task. Conducted extensive experimentation to tune hyperparameters and optimize model performance. <https://github.com/anushka17agarwal/skin-lesion-segmentation>