Rohit Das

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Summary

AI/ML Engineer with a Master's degree in Computer Science (specializing in Computer Vision and AI). Experience in delivering projects in generative AI, 3D vision, and applied ML in research labs and startups. Proven ability to translate research into real-world solutions such as virtual try-on, and texture generation.

Work Experience

AI Engineer(Consultant) Jan 2024 - Present

Worked with multiple companies as a freelance consultant.

- (Stealth Startup, Tripura) Creating a Legal RAG saas system for Tripura judiciary system
  Frameworks: PyTorch, Ollama, VectorDB, AnythingLLM, Docker
- (Ctruh, Bangalore) Suggested masking strategy for Indian wear on V-TON system and designed a pipeline for 3D cloth deformation on 2D images using Fabric estimation and DrapeNet.
  Frameworks: PyTorch, CNN, U-net
- (Headspace, SF) Created an acne detection & removal pipeline for celebrity headshots.
  Frameworks: SAM, Grounding DINO, ControlNet, FastAPI, Docker
- (Estilo-AI, Ghana) Created a body-part segmentation for a V-TON system as well as implemented real-time rendering.
  Frameworks: SAM, Grounding DINO, Transformers, ControlNet, PyTorch, OpenCV, FastAPI, Docker
- (Global Digital Mojo, Taiwan) Created a survey on explainable AI usage and its future implications.
  Frameworks: SHAP, LIME

AI Engineer(Intern) at Bifrost, Singapore Sep 2023 - Feb 2024

- Reduced text-to-texture generation time from 45 minutes → 90 seconds.
  Frameworks: Blender, Stable Diffusion, ControlNet, Pytorch3D

Junior Researcher at CI3D Lab (NTUST, Taiwan) 2021 - 2023

- Researched and developed a novel method for 3D face texture estimation from single 2D image using StyleGAN3 and 3D Morphable Models(3DMM).
  Frameworks: PyTorch3D, Open3D,OpenGL,Blender,Pytorch,OpenCV, Docker

Education

2021 - 2023 M.S in Computer Science from **NTNU, Taiwan**
2014 - 2018 B.Tech in Computer Science from **CIT, Kolkata (India)**

Independent Projects & Publications

Judiciary RAG Project

- Designed and implemented a legal RAG SaaS system for the Tripura Judiciary.
- Indexed case hearing data using **FAISS** + embeddings trained on the Indian Constitution & central acts.
- Evaluated with Recall@10 **(80%)** and reduced average legal query resolution time by **40%**.
  Frameworks: PyTorch, Ollama, VectorDB, AnythingLLM, Docker

3D-GANTex GitHub

- Used StyleGAN3 + 3DDFA-V2 to reconstruct 3D face models from single images with consistent multi-view textures.
- Achieved PSNR **28.7** / SSIM **0.91** vs baselines on FFHQ dataset.
  Frameworks: PyTorch3D, OpenCV, Pytorch

Mesh from Video GitHub

- Designed a novel pipeline for 3D face texture estimation using 3DDFA-V3.
- Explored limitations due to dependence on FLAME coefficients.
  Frameworks: PyTorch3D, OpenCV, Pytorch, FLAME, 3DMM, 3DDFA

Publication: A Survey of the Normal Map Generator of GIMP from Single Shot Human Face Image. 3DSA-2022 ResearchGate

- The study explores the generation of near-accurate normal maps from a single image of a human face using the FFHQ dataset and GIMP.
- The research demonstrated effective methods for producing normal maps, contributing to advancements in texture mapping technologies.

Publication: 3D Face Reconstruction with StyleGAN3-based Multi-View Images and 3DDFA based Mesh Generation Arxiv

- A novel method utilizing StyleGAN and 3DMM to generate front face mesh from single 2D pose image.
- The pipeline achieved near to accurate texture from a single 2D mesh and helps in predicting unseen regions of the face.

Skills

Programming & ML: Python, C++, PyTorch, TensorFlow, CUDA, Transformers
Computer Vision & 3D: YOLO, DINO, NeRF, 3DDFA, FLAME, COLMAP, OpenCV, Open3D
Deployment & MLOps: Docker, FastAPI, ONNX, TensorRT, AWS