ANIKET GOPE

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OVERVIEW

ML Engineer with 2+ years of experience in Machine Learning, Algorithmic Research and Advisory based roles. Currently pursuing M.Tech in Artificial Intelligence and Machine Learning.

EDUCATION

M.Tech in Artificial Intelligence and Machine Learning, Symbiosis Institute of Technology   2024 - 2026
Relevant Coursework: Supervised and Unsupervised ML, Deep Learning, Machine Vision, NLP, Reinforcement Learning, Graph Neural Networks, GANs

BS. in Programming and Data Science, Indian Institute of Technology, Madras   2021 - 2024
Relevant Coursework: Machine Learning Theory, Maths for Data Science , DBMS, App Development (Flask, VueJS)

B.Tech Honors in Electrical and Electronics Engineering, KIIT University   2018 - 2022
Honors in Signal Processing
Minor in Data Analytics
Relevant Coursework: Linear Algebra, Calculus, Numerical Analysis, Signals and Systems, Control Systems, Data Communication, Image Processing

SKILLS

Languages	Python, C, C++, SQL
Libraries/Tools	Pytorch, Tensorflow, Numpy, Scipy, Flask, Django, Sqlite, OpenGL, OpenCV, CrewAI, PyOpenGL, PyMongo, CMAKE, Catch2, PyTest
Technical Skills	OOPs, Smart Pointers, Virtual Concepts, Multithreading, Singleton and Factory Pattern Regression, Classification and Clustering Algorithms, CNN, RNN, GNN, AutoEncoders, Transformers, GANs, Image Processing and Computer Vision

EXPERIENCE

Research Associate at **NRSC-ISRO**   May 2025 - June 2025

- Working as Associate under ISRO-SPPU Joint Research Programme.
- Primary research focus: Segmentation Models and LLMs.

AI/ML Lead at **MicroFacet**   Sept 2022 - Present

- Implemented **UV Render Pass, PRNG Algorithms and Optimized Sorting Algorithms** (**3x faster** compared to parallel sorting).
- Implemented **Newton Raphson and Bisection methods for root finding** adding to the core numerical module for faster computation.
- Actively contributing to the product by implementing **spatial data structures, ray tracing and rasterization algorithms.**
- Managing team of 5+ developers for the open-source organization.
- Played the role of Project Manager in the launch of the initial alpha release of Cake(Rendering Engine).

Analyst - Tech Advisory at **KPMG India**   Dec 2021 - March 2023

- Executed transformation projects **for Fortune 500 companies across 10+ countries**.
- Administered go-live of TPRM processes **across 50+ countries**.
- Conducted technical infrastructure risk assessments as per ISO 27001 **for 2 MNCs for 50+ vendors.**

PROJECTS

Image-to-Image Pipeline for 2D Image to 3D Model Construction and Texture Mapping: Utilized OpenCV for image processing. Image Segmentation performed using META's SAM2 model. Segmented image is cropped and depth estimation is performed using Open3D. 3D model is constructed using Stable Fast 3D and texture is mapped through UV Mapping using OpenGL. ([View Project](#))

RAG Chat Application with a Small GPT for Academic Documents: Built a RAG application using LangChain and FAISS that allows users to upload documents and chat with them. Document is converted to markdown using Marker-PDF. Markdown is converted to embeddings usin HuggingFaceEmbeddings. Generation done through Gemini Flash 1.5 .Chat memory built with Langchain's ConversationBufferMemory and ConversationalRetrievalChain. A small GPT is written with PyTorch that allows users to set parameters (max tokens, iterations, temperature, etc.) and train it on their corpus. ([View Project](#))

Classification and Segmentation of Brain Tumor using MRI Scans: Developed a system for classifying brain tumors based on the SARTAJ and BR35H datasets with classes - glioma, meningioma, no tumor and pituitary. Trained a VGG16 (CNN) model for classification of tumor. If tumor detected, tumor region is segmented using RESNET. ([View Project](#))

Mental Disorder Classification: Built a helps model that in classifying Depression, Bipolar 1 and Bipolar 2 based on user inputs. Built a flask app and hosted it on Render. [View Project](#)

Fashion Image Generation using GANs: Developed a PyTorch GAN using the FashionMNIST dataset (60K/10K, 28x28 grayscale, 10 classes). Designed a CNN-based generator (transposed convolutions) and discriminator, trained with Adam and binary cross-entropy to synthesize realistic fashion images.([View Project](#))

Style Transfer using GANs: Engineered a PyTorch GAN that applies artistic styles to content images using famous artwork samples. Built a CNN-based generator and discriminator, and trained the model with Adam using combined content and style loss for balanced image transformation. ([View Project](#))

Music Recommendation and Generation App Developed an application using Flask and Supabase for music recommendation built using KNN and Collaborative Filtering models, generation using HuggingFace text-2-music models and integrated Gemini Flash 1.5 API for generating new lyrics based on pre-defined prompts. ([View Project](#))

Traffic Signal Control System Building a solution using Yolov5 and Reinforcement Learning. For building an adaptive traffic control system used Actor-Critic method and Yolov5 and vision transformers to monitoring purposes. ([View Project](#))

PUBLICATIONS

- **Enhanced Cardiac Arrhythmia Classification Using Hyperparameter-Tuned Classifiers and Nature-Inspired Optimization Algorithms for Feature Selection**(Under Review - Springer)
  - Developed and optimized a machine learning classification pipeline by leveraging 15 Nature-Inspired Optimization Algorithms (NIOAs) for feature selection and fine-tuning 5 base classifiers (LSVM, Logistic Regression, Decision Tree, Random Forest, KSVM). Achieved enhanced classification performance and reduced data dimensionality through a robust methodology including data imputation, duplicate elimination, and feature scaling.

ACHIEVEMENTS

- **Achieved 1st Position in Smart India Hackathon (Internal at SIT)** for the Traffic Signal Control Project. Served as the Team Lead for a team of 6 developers.

- Attended lectures on Present and Future Computing Systems at IISc, Bangalore.

- Conducted sessions on "**Multivariate Analysis**" and "**Evaluation of GANs**" at SIT Pune.

CERTIFICATIONS

- **Kaggle** Intro to Machine Learning

- **Kaggle** Data Cleaning

- **Kaggle** Computer Vision

- **DeepLearning.ai** - Quantization Fundamentals with HuggingFace

- **DeepLearning.ai** - Quantization in Depth

- **HackerRank** - Problem Solving

- **HackerRank** - SQL