

# ANIKET GOPE

+91-9674235140 ◊ Kolkata, West Bengal, India

[aniketgope77@gmail.com](mailto:aniketgope77@gmail.com) ◊ [Linkedin](#) ◊ [Github](#)

## 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

**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

**Foundations in Programming and Data Science**, Indian Institute of Technology, Madras 2021 - 2022

Relevant Coursework: Machine Learning Theory, Maths for Data Science, DBMS, App Development (Flask, VueJS)

## SKILLS

**Languages** Python, C, C++, SQL

**Libraries/Tools** Pytorch, Tensorflow, Numpy, Scipy, Flask, FastAPI, Sqlite, OpenGL, OpenCV, CrewAI, PyOpenGL, PyMongo, CMAKE, Catch2, PyTest, Docker, GCP

**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

**AI/ML Engineer at Murphi.ai** Full Time, July 2025 - Present

- Led research and development for Murphi Drive, an agentic AI based retrieval tool for querying multimodal data across distributed storage - reduced querying time by 33
- Led first development for first alpha release of Murphi Voice - outbound calling agent and conversational AI with integrated AI agents for DB querying.
- Currently leading development on in-house SLM with RLHF with capabilities for short & long term memory with user-level personalization.

**Research Associate at NRSC-ISRO** Student Researcher, 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.io** Self Employed, 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).
- Currently serving as Project Lead for CupCake - AI Suite of MicroFacet.io. Working on NERFs for relighting and 2D image to 3D reconstruction

**Analyst - Tech Advisory at KPMG India** Full Time, 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

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**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 using 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

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- **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

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- **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

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- **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