

Gyanateet Dutta

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EDUCATION

UNIVERSITY OF LEEDS

MSc Advanced Computer Science & AI
Leeds, UK · 2023-2024
Deep Learning, Computer Vision, RL, Quantum Computing

KIIT UNIVERSITY

B.Tech Computer Science · CGPA: 9.23/10
Bhubaneswar, India · 2019-2023

SKILLS

LANGUAGES & FRAMEWORKS

Python · C++ · CUDA C++ · JAX (Flax, Haiku) · PyTorch · TensorFlow

ROBOTICS & POLICY LEARNING

LeRobot · Diffusion Policies · VLAs · Imitation Learning · PPO · A2C · Gymnasium · SB3

COMPUTER VISION & SSL

ViT · DINOv2 · V-JEPA 2 · SigLIP · YOLO · Mask R-CNN · OpenCV

3D VISION & RENDERING

NeRF · Gaussian Splatting · MAST3R · Spann3R · Multi-view Geometry

GENERATIVE & DIFFUSION

Diffusion Transformers · ScaleDP · ControlNet · SDXL · LoRA · PEFT

INFRASTRUCTURE

PyTorch Distributed · Docker · Kubernetes · TPU v4 · Jetson AGX Orin · W&B

QUANTUM

Qiskit · PennyLane · Stim · Surface Codes · QEC · VQE

PUBLICATIONS

Self-Supervised ViT for Surgical Phase Recognition in ESD

G. Dutta, A. Hammad, T. Archer, Q. Dou, N. Mohammed, S. Ali
IEEE ISBI 2026 · First author

Improved Pothole Detection Using YOLOv7 and ESRGAN

N. K. Rout, G. Dutta, et al.
arXiv:2401.08588 · Preprint

Solving TSP using HNN and HNN-SA Algorithms

Gyanateet Dutta
arXiv:2202.13746 · 2022 · Preprint

COMMUNITY & LEADERSHIP

GEFORCE STUDENT AMBASSADOR

NVIDIA · 2023-Present
GPU computing, CUDA and AI/ML workshops.

QUANTUM WORKSHOP SPEAKER

GDG SMU · November 2025
Quantum computing and applications.

OPEN-SOURCE RESEARCH SOFTWARE

Public models, datasets and Spaces on Hugging Face; research code on GitHub.

EXPERIENCE

UNIVERSITY OF LEEDS

RESEARCH TECHNICIAN · AI IN MEDICINE & SURGERY (AIMS)
November 2025-Present | Leeds, UK · Hybrid

- Support **AIMS PhD students** with research software tooling, training pipelines, data handling and evaluation workflows.
- Develop computer-vision techniques for **object understanding and tracking** using foundation and world models.
- Build **synthetic data generation** pipelines for training and evaluating perception models.

UNIVERSITY OF LEEDS

COMPUTER VISION RESEARCH INTERN · AIMS GROUP
March 2025-November 2025 | Leeds, UK · On-site

- Contributed to the **WUN AI for Surgical Training** project with NHS clinicians, developing self-supervised surgical phase recognition from ESD video.
- Used **vision/video transformers** for spatio-temporal representation learning; implemented multi-GPU PyTorch training and CUDA-optimised data pipelines.
- Deployed the workflow-recognition pipeline for real-time inference on **NVIDIA Jetson AGX Orin**, using transformer inference optimisations for edge execution.
- First author, IEEE ISBI 2026** paper on self-supervised surgical phase recognition.

UNIVERSITY OF LEEDS

RESEARCH ASSISTANT · HELIX XR / CULTURAL PRESERVATION
November 2024-February 2025 | Leeds, UK

- Built a sparse-view reconstruction pipeline for **Dalton Mills** using MAST3R, Spann3R and Gaussian Splatting, supporting immersive VR visualisation.

PROJECTS

GEMMA-LE VLA · VISION-LANGUAGE-ACTION POLICY

Python, LeRobot, JAX, PyTorch
Language-conditioned policy combining **SigLIP + Gemma 3 + ScaleDP** for bimanual manipulation and diffusion-based action generation.

RL POLICY SUITE · ROBOTIC & CLASSIC CONTROL

Python, PyTorch, Gymnasium, Stable-Baselines3
PPO and A2C on CartPole/LunarLander; actor-critic on **PandaReachDense-v2** with vectorised environments, observation normalisation and W&B diagnostics.

B3TT3R · 3D RECONSTRUCTION PIPELINE

Python, PyTorch, Gaussian Splatting
Sparse-view 3D reconstruction using **MASt3R + Spann3R**, producing point-cloud representations for scene understanding.

JAX DIFFUSERS CONTROLNET

JAX, Flax, TPU v4 · HF / Google sprint, 2023
ControlNet training and diffusion-model experimentation on **TPU v4**, focused on accelerator-based generative modelling.

SYNDROMENET · QUANTUM ERROR CORRECTION

Python, Stim, Qiskit
Research code for surface and repetition codes, with modular components for quantum-error-correction and decoding experiments.

COMPETITIONS & RECOGNITION

- 1st Place, Quantum Rings Virtual Challenge** · YQuantum 2025, Yale; team Quantum Bits with Alisa Petrusinskaia.
- 1st Place, Healthcare “Bring Your Own Use Case”** · Bradford Quantum Hackathon 2025; team Ryoushi, quantum genomics.
- Finalist, team Quantum Buddies** · Lord Mayor’s Quantum Hackathon, City of London / IBM, Mansion House, 2025.
- AWS AI & ML Scholar** · 2022.