Animesh Srivastava

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Education

University College London - *MSc in Machine Learning* 2023 - 2024

- Final grades: Merit
- Relevant modules: Machine Vision, Robot Vision and Navigation, Applied DL, Supervised Learning, Applied ML, Bayesian Deep Learning, Graphical Models, Information Retrieval and Data Mining
- Relevant coursework topics: SLAM, SfM, 2-view geometry, Feature extraction and matching, Data Augmentation, CNNs, VAE, GANs, RNNs, CNNs, Vision Transformers
- Dissertation: "High Resolution Novel View Synthesis with 3D Gaussian Splatting" under UCL's Industry Exchange Network

St Stephen's College, University of Delhi - *BSc in Physics (Hons)* 2019 - 2022

- Final grades: **8.42/10**, equivalent to First-Class Honours, UK
- Selected modules: Quantum mechanics, Astrophysics, Linear Algebra and Tensor Analysis, Advanced Calculus, Computational Physics and Probability and Statistics
- Recipient of the INSPIRE scholarship, awarded by Government of India

St Dominic Savio College, India - *Secondary Education* 2017 - 2019

- Class 12th (equivalent to A-levels, UK): **97.6%** Physics, Chemistry, Mathematics, English, Computer Science
- Class 10th (equivalent to GCSE, UK): **95.5%**

Experience

Machine Learning Intern - *Bodymetrics, London, UK* May 2024 - Sep 2024

- Optimised 3D gaussian splatting pipeline for high resolution Novel View Synthesis (NVS) of fashion models from ultra-high resolution training images
- Created a new custom dataset, performed data pre-processing, hyperparameter tuning and refined training loss functions to enhance PSNR, SSIM and LPIPS metrics of NVS
- Integrated GroundingDino, a zero-shot object detection model into the pipeline, reducing model size by 50% while preserving the rendering quality of foreground subjects in NVS
- Developed an interactive website to show differences in NVS across models, providing insights into model parameters and highlighting areas where the model failed

Geospatial Analyst - *Pixxel, Bengaluru, India* Jan 2023 - Jul 2023

- Designed a regression based ML model to monitor farm level crop growth from satellite images
- Implemented semantic segmentation, NDVI extraction, time series analysis and K-means clustering algorithms
- Built an interactive dashboard for real-time monitoring and decision-making
- Optimised and scaled the model for deployment on the company's Earth monitoring platform, enabling global real-time crop growth monitoring

Machine Learning Intern - *Spartificial, India* Nov 2022 - Jan 2023

- Developed a U-Net based CNN to detect active fire regions with multispectral satellite images
- Engineered and utilised custom spectral indices and other band-specific thresholds to enhance the detection of active fire pixels
- Evaluated model performance on IoU, precision, recall and dice coefficient metrics

Summer Research Fellow - *Raman Research Institute, Bengaluru, India* Jul 2021 - Sep 2021

- Solved differential equations and simulated satellite trajectories to optimise lunar orbits, eliminate station-keeping manoeuvres and fulfil mission objectives
- Presented findings on lunar orbit design and analysis at the Astronomy and Astrophysics Club at RRI and the Indian Academy of Sciences

Skills

Programming Languages: Python, C++, JAVA, SQL, C#, MATLAB, ARDUINO, ESP32

ML and DS tools: OpenCV, Numpy, PyTorch, TensorFlow, Scikit-learn, Pandas, Matplotlib, Plotly/Dash, SciPy, GDAL, Rasterio, pySTAC, GeoPandas, xarray/rioxarray

Other: Git and GitHub, Docker, FastAPI, VSCode, QGIS, Meshlab, CloudCompare, COLMAP, Unity, LaTeX, Linux (Ubuntu), JIRA

Certificates

1. Advanced Techniques with TensorFlow (Coursera): Specialisation in custom models, distributed training, computer vision, autoencoders, and generative deep learning
2. IELTS score 8.0

Visa sponsorship

Eligible to work in the UK without the need for visa sponsorship