Animesh Srivastava

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Education

University College London - *Master of Science in Machine Learning*　　　　2023 - 2024

- Modules : Machine vision, Graphical models, Bayesian Deep Learning, Supervised learning, Robot vision and navigation, Information retrieval and data mining, Applied Machine Learning and Applied Deep Learning
- Computer vision : Develop and study CNNs, Variational Auto-encoders, Data-augmented vision transformers, 3D reconstruction models and SLAM using PyTorch and C++
- NLP : Develop and evaluate query likelihood models (probabilistic and neural network) for document retrieval
- Dissertation : "High Resolution Novel View Synthesis with 3D Gaussian Splatting" under the supervision of Dr Suran Goonatilake and Daniele Giunchi

St Stephen's College, University of Delhi - *Bachelor of Science in Physics Honours*　　　　2019 - 2022

- Final CGPA of 8.42
- Modules : Linear Algebra and Tensor Analysis, Advanced Calculus, Mathematical Physics, Astrophysics, Probability and Statistics and Quantum mechanics
- Computational physics : Develop and evaluate numerical and statistical physics model using Python
- Recipient of the INPSIRE scholarship, awarded by the Government of India

St. Dominic Savio College, Lucknow, India - *Secondary education*　　　　2019

- **2019** - Secured **97.6%** in class XII ISC board with a perfect score in computer science and ranked among the top 1% all over India
- **2017** - Secured **95.5%** in class X ICSE board with a perfect score in computer science

Experience

Industry-linked MSc dissertation - *Bodymetrics, London, UK*　　　　May 2024 - Present

- Optimise current gaussian splatting pipeline for high resolution novel view synthesis for fashion models
- Generate renders in Unity to pinpoint shortcomings with high frequency features
- Investigate and optimise an end-to-end 3D gaussian splatting pipeline in **Pytorch** and **CUDA**

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

- Designed a novel model to monitor crop growth at farm level using multispectral satellite data, leading to a 25% improvement in prediction accuracy
- Scaled up the model to segment farmlands and predict crop cycles with 80% accuracy, covering over 100,000 km^2
- Developed efficient Python scripts to query satellite data, segment farm boundaries, model crop cycles, and create an interactive dashboard using Plotly/Dash, facilitating real-time monitoring and decision-making for agricultural stakeholders
- Maintained and updated deep learning models post-deployment on the company platform, reducing latency and prediction errors by 15%

Summer Research Fellow- *Raman Research Institute (RRI), Bengaluru, India*　　　　July 2021 - Sep 2021

- Designed a stable orbit for a prospective Indian lunar mission, ensuring alignment with all mission objectives and enhancing mission feasibility
- Simulated satellite trajectories using GMAT and efficiently processed results with pandas, optimising data analysis and trajectory accuracy
- Proposed a final orbit with a 2-year lifespan, eliminating the need for station-keeping manoeuvres and thereby reducing mission operational costs
- Presented findings to the Astronomy & Astrophysics group at RRI and the Indian Academy of Sciences, gaining recognition for innovative orbital dynamics solutions and contributing to national space exploration initiatives

Skills

Programming languages

- Experienced in **Python** for ML/DL, competitive coding, data science and computational physics
- Pandas, **Numpy**, **PyTorch**, **Scikit-learn**, **Matplotlib**, Plotly/Dash, SciPy, TensorFlow, GDAL, Rasterio, GeoPandas, rioxarray and pySTAC
- Competent in JAVA , C++ **,** ARDUINO and ESP32
- MATLAB
- CUDA for training on GPUs
- Unity for AR/VR

Other softwares and tools

- **Git** and **GitHub**
- **Linux** (**Ubuntu**)
- **QGIS**
- MS Excel, Word, PowerPoint and LaTeX

Certificates

- Advanced techniques with TensorFlow using custom models, distributed training, computer vision, autoencoders and generative deep learning
- Guided internship on "Active Fire Detection using Multiband Satellite Imagery and Deep Learning"
- IELTS score 8.0

Positions of responsibilities

Technical head - *Electronics Society, St Stephen's College*   2019 - 2022

- Led weekly hands-on workshops on ARDUINO projects, successfully mentoring and onboarding over 20 new members
- Led the design and development of an improved obstacle-avoiding robot and a home automation system using ESP32
- Efficiently managed all logistical needs for the society of over 50 members, ensuring seamless operations throughout the academic year
- Successfully organised annual society events, attracting over 200 participants from 20+ colleges, and increased event attendance by 25% year-over-year

Workshop head - *Computer Science Society, St Stephen's College*   2019 - 2022

- Led weekly hands-on Python workshops, covering popular libraries such as NumPy Matplotlib and Pandas
- Organised and facilitated workshops on topics ranging from machine learning, data science, algorithms, and data structures, empowering for over 100 students across all courses
- Developed and managed weekly social media engagement posts, sharing insightful tidbits on computer science and technology, resulting in a 25% increase in follower engagement and doubling our online community size within six months
- Successfully organised the society's annual competitive coding hackathon on GeeksForGeeks, attracting over 150 attendees from multiple universities across the university

References

Available on request