

Swapnil Kumar Goel

Bengaluru, Karnataka

[in](#) [swapnilkumargoel](#) [G](#) [swapgoel](#) [Globe](#) [Portfolio](#)

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Introduction

Highly motivated IIT graduate, with experience in signal & image processing, with hands-on experience in data analysis and visualization. Proven track record of excellence. 1st place in Terrapropect Hackathon. 4th rank in GATE Geophysics.

Education

Indian Institute of Technology (IIT ISM) | (Grade: 8.30 / 10)

Master's Degree, Applied Geophysics

Aug 2022 - May 2025

Dhanbad, Jharkhand

Mahatma Gandhi Kashi Vidyapeeth (MGKVP) | (Grade: 8.05 / 10)

Bachelor's Degree, Physics & Mathematics

Aug 2019 - May 2022

Varanasi, Uttar Pradesh

Experience

GalaxEye

Signal Processing Intern

May 2025 - Present

Bengaluru, Karnataka

- Developed a GPU-accelerated SAR image stitching pipeline, automating the stitching of hundreds of images — reducing a manual process that took several days to just seconds through code.
- Implemented phase curvature autofocus to correct Synthetic Aperture Radar(SAR) phase errors via low-order polynomials.

National Institute of Science Education & Research (NISER)

Summer Research Intern

May 2023 - Jul 2023

Bhubaneswar, Odisha

- Georeferenced Chandrayaan-2 IIRS images using SPICE, & FOV methods to compute sub-spacecraft & sub-solar positions.
- Calculated incidence, emission, and phase angles for lunar topography analysis and angle distribution plots.
- Evaluated accuracy (avg offsets 750 m near equator, 2200 m near poles) and recommended Computer Vision Techniques.

Projects

Comparative Analysis of Seismic Data Denoising Techniques | Python, Tensorflow, Pytorch

Aug 2024 - May 2025

Master's Thesis

- Implemented a U-Net in PyTorch to denoise 3D seismic volumes, achieving SSIM 0.92 on test data.
- Outperformed F-K, tau-p, median, and Wiener filters—improving SSIM by 0.15.

Certifications

MathWorks: Introduction to Computer Vision . [🔗](#)

May 2025

MathWorks: Automating Image Processing. [🔗](#)

Jan 2025

MathWorks: Image Processing for Engineering & Science Specialization [🔗](#)

Jan 2025

MathWorks: Image Segmentation, Filtering, and Region Analysis. [🔗](#)

Dec 2024

MathWorks: Introduction to Image Processing. [🔗](#)

Dec 2024

Imperial College London: Mathematics for Machine Learning Specialization. [🔗](#)

Mar 2024

Skills

- Programming:** Python, Java, Matlab, MySQL, Processing, HTML, CSS, Javascript
- Data Science & ML:** TensorFlow, OpenCV, PyTorch, Scikit-learn, Pandas, NumPy, Matplotlib, SpiceyPy
- Tools & Environments:** Google Suite, MS Office, Jupyter Notebook, VS Code, Docker, Git, Linux, ArcGIS, QGIS
- Soft Skills:** Strong problem-solving ability, Quick Learner, Strong Aptitude & Reasoning Skills

Achievements

Terrapropect Hackathon - Secured 1st position - Team OpendTectives

Oct 2024

GATE Geophysics 2025 - Secured 4th Rank

Feb 2025

GATE Geophysics 2024 - Secured 30th Rank

Feb 2024

IIT-JAM Physics 2022 - Secured 465th Rank

Feb 2022

IIT JEE Mains - Qualified

Apr 2018

Extracurriculars & Hobbies

Silver Medal (2nd) - Carrom, Diamond Day Sports Championship 2025

Apr 2025

Gold Medal (1st) - Badminton, Intra-hostel Sports Championship 2024

Mar 2024

Other Sports I play: Chess, Table-Tennis

Love Solving Brain Teasers: Sudoku, Hidato, Rubik's Cube