SUDIP BANERJEE

Remote Sensing • Cryosphere Studies • Hazard & Risk Assessment

Date of birth:16/10/2000 | **Place of birth:** West Bengal, India | **Nationality:** India | **Sex:** Male

Phone: (+91) 8250441754 (Mobile) | **Email:** contacts.sudipbanerjee@gmail.com

LinkedIn: https://www.linkedin.com/in/sudip-banerjee-72b83b20a/

ORCiD: https://orcid.org/0009-0006-3003-9389

Address: Vill+P.O+P.S – Para, Dist. – Purulia, State – West Bengal, Pin code - 723155, India

ABOUT MYSELF

As a specialist in Remote Sensing, Cryosphere Dynamics, and AI-powered Geospatial Modelling, I engineer solutions for Himalayan hazard assessment and GLOF risk prediction. My work fuses advanced GIS, machine learning, and hydrodynamic simulations to tackle complex terrain challenges. A DGCA-certified drone pilot and national hackathon and mapathon award-winner for innovative geospatial systems.

WORK EXPERIENCE

RESEARCH INTERNSIP (Remote)
Selected for an Internship at Spatial Data Lab, Harvard University, U.S.A
Department Spatial Data Lab (SDL) **Website:** https://sdl.gis.harvard.edu/

RESEARCH INTERNSIP (On-site)
15/05/2024 - 18/07/2024
Wadia Institute of Himalayan Geology, Dehradun | **Institute Website**: https://www.wihg.res.in/

Work as a Research Intern at an autonomous institution of Department of Science & Technology (DST), GoI under the supervision of **Dr.Amit Kumar, Scientist "C"**

- Evaluated and mapped potentially vulnerable glacial lakes using remote sensing and GIS.
- Analyzed multi-temporal satellite data to assess glacial lake dynamics.
- Contributed to Glacial Lake Outburst Flood (GLOF) hazard assessment studies.
- Processed DEMs and derived geomorphological parameters for lake basins.
- Prepared technical reports and visualizations for scientific communication.

EDUCATION

MTech in Remote Sensing (Earth Resources - Cryosphere)
Birla Institute of Technology, Mesra, Ranchi — 2023
CGPA: 9.14 / 10.0 | First Class | Thesis: *Glacial Lake Outburst Flood (GLOF) Hazard and Risk Assessment of Maban Lake in the Lassar Yankti Basin of Uttarakhand Using Geospatial Techniques and Hydrodynamic Modelling*

Masters in Geography (Remote Sensing & GIS Specialization)
Panjab University, Chandigarh — 2021
CGPA: 6.4 / 10 | First Class | Thesis: *Morphometric and Hydrological Analysis of Pabbar River Basin, Himachal Pradesh Using Geo-Spatial Techniques*

B.A. (Hons) in Geography (Geomorphology Specialization)
Sidho Kanho Birsha University, West Bengal — 2018
CGPA: 8.2 / 10.0 | First Class with Distinction

HONOURS & AWARDS

- **1st Runner-Up at Himashield-2024 Hackathon** organized by C-DAC Trivandrum, MeitY,GoI – (3 Lakh Prize developing a novel and automated web application for Glacier Lake outburst flood EWS system)
- **Champion (Winner) at IIT Bombay** FOSSEE Geospatial Mapathon 2024 (2900+ teams participated) - (India's most prestigious open-source geospatial challenge)
- **DGCA Registered and Certified Drone Pilot** - UAV-based surveying, LiDAR mapping
- **Qualified UGC NET 2023 (Geography)**, University Grants Commission of India
- **Qualified Graduate Aptitude Test in Engineering (GATE), 2024** examination in Geomatics Engineering.
- **NPTEL Advanced Geomatics Engineering (Secured Sliver + Elite Medal)**
- Recipient of **VC Scholarship** at Panjab University on the basis of merit during my Master's in Geography.
- Recipient of **Institute Scholarship** for exceptional results in the first year of my M.Tech at BIT Mesra.

SKILLS

Software Skills:

- ArcGIS Desktop/Pro Suite
- Erdas Imagine
- ENVI
- SNAP
- QGIS
- Agisoft Metashape
- HEC-RAS and HEC-HMS
- MS OFFICE (Word, Power Point, Excel)

Programming Language:

- Python (Advance)
- C (Basic)
- R (Advance)
- Google Earth Engine (Advance)
- MATLAB (Basic)

Instrument Knowledge:

- Drone Survey and Mapping
- DGPS
- Field Spectroradiometer
- Theodolite etc.

Research Skills:

- Cryosphere–hazard interaction analysis
- GLOF modelling (HEC-RAS 1D/2D)
- Satellite-based landslide/glacier monitoring
- Google Earth Engine (GEE) app development
- Machine learning for geohazard detection
- DEM and time-series analysis
- Open-source geospatial tools (Python, QGIS)
- InSAR for GLOF analysis

LANGUAGES

English

Advanced (C1)

Bengali

Bilingual or Proficient (C2)

Hindi

Bilingual or Proficient (C2)

Punjabi

Intermediate (B1)

CERTIFICATIONS

- **Four-Days Workshop on SAR Data Processing and Its Application,** Birla Institute of Technology, Mesra – 2024
- **Training Course on Crysopheric Modelling and Hazards,** IIT Roorkee and NIH **-** 6th May to 11th May,2024
- **Geodata Processing using Python,** Indian Institute of Remote Sensing (IIRS), Indian Space Research Organization (ISRO) - 2024
- **Advanced Application of AI/ML in Geospatial Domain,**IEEE GRSS Kolkata Chapter - 2024
- **International Webinar Training on Forestry Application (QGIS),** TGISlab - 2024
- **SERB Sponsored Workshop on Spatial Data Analytics**, Indian Institute of Information Technology, Sri City - 2024
- **Flood Risk Assessment in QGIS**,Swastik Edustart - Geospatial Training Institute - 2024
- **Advanced Geospatial technologies for Disaster Risk Reduction (DRR)**, Indian Institute of Remote Sensing (IIRS), Indian Space Research Organization (ISRO) - 2022
- **21 Days Online GIS Training Program using QGIS,**Department of Geography, School of Earth Sciences, Central University of Karnataka jointly with State Institute of Urban Development, Karnataka, India - 2020

CONFERENCE

- Presented research poster at **CITE-2024**, IISER Pune, **on *AHP-MCDA in Flood Vulnerability Assessment of the Pabbar River Basin, Himachal Pradesh*.**
- Winner of **Best Research Poster** at the IAGR International Conference organized by ICSSR and MoES in 2024.
- Research work selected for presentation at the **Indian Cryosphere Meet (ICM) 2025** at IIT Bombay.

PUBLICATIONS

TITLE - SPATIO-TEMPORAL VARIATION OF VEGETATION COVER AND ITS RESPONSE TO CLIMATIC FACTORS IN THE SOUTHWESTERN PART OF BENGAL BASIN, INDIA**,** STATUS – SUBMITTED FOR PUBLICATION

TITLE - GLOF RISK ASSESMENT AND HYDRODYNAMIC SIMULATION OF LASSAR YANKTI BASIN OF KUMAON HIMALAYA STATUS – SUBMITTED FOR PUBLICATION

AFFILIATIONS

- **Indian Society of Remote Sensing (ISRS) Life Member · Jan 2024 - Present**
- **IEEE GRSS Student Member · Mar 2024 – Present**
- **Association of Polar Early Career Scientists · Jan 2025 – Present**

VOLUNTEERING

Worked as Outreach and Social Media Coordinator for IEEE GRSS BIT Mesra Student Chapter

- Conducted various seminars and online lecture series to encourage young minds to take part in Geosciences.
- Our recent online lecture - https://www.grss-ieee.org/event/geospatial-analytics-using-deep-learning/

RECOMMENDATIONS

Dr. Akhouri Pramod Krishna, Professor

Department of Remote Sensing & Geoinformatics

Birla Institute of Technology, Mesra

e-mail - apkrishna@bitmesra.ac.in

Dr. Amit Kumar, Scientist "C"

Glaciology and Hydrogeology Group

Wadia Institute of Himalayan Geology (WIHG), Dehradun

e-mail - amitwalia@wihg.res.in