DR. ABHIK SAHA

Assistant Professor, Adamas University, Kolkata.

B.Tech in CSE (WBUT) | M.Tech in Geomatics (IIT-Dhn) | PhD in Multidiscipline (IIT-Dhn)

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Scopus id: 57224203046
Web of Science Researcher id: JVO-7851-2024
Vidwan id: 474456
ResearchGate: https://www.researchgate.net/profile/Abhik-Saha-4

Education

- **Bachelor of Technology, Haldia Institute of Technology, Halida, 2010-2014**

  Department: Computer Science and Engineering

- **Master of Technology, Indian Institute of Technology (Indian School of Mines), Dhanbad, 2015-2017**

  Department: Geomatics

  Dissertation Title: Landslide Hazard Zonation in Eastern Himalayan Region.

  Supervisor: Prof. Vasanta Govind Kumar Villuri.

- **Doctor of Philosophy, Indian Institute of Technology (Indian School of Mines), Dhanbad, 2017-2023**

  Thesis Title: Development and Assessment of A Hybrid Machine Learning-based Landslide Susceptibility Mapping Model in The Darjeeling Himalayas.

  Supervisor(s): Prof. Vasanta Govind Kumar Villuri, IIT(ISM), Dhanbad.

  Dr. Ashutosh Bhardwaj (External), IIRS (ISRO), Dehradun.

Research Interests

Landslide susceptibility mapping, Hazard assessment, Multi-hazard assessment, Machine Learning techniques using GIS, Remote Sensing, Modelling techniques, and Geospatial technologies.

Work Experience

- **Assistant professor, Adamas University, Kolkata,**

2024-till now

Duties involved

- **Course Preparation and Delivery:** Design and deliver lectures, lab sessions, and tutorials for undergraduate students in subjects related to CSE and geoinformatics.
- **Syllabus Development:** Contribute to updating or creating new curricula aligned with current trends in CSE, like artificial intelligence, data science, geoinformatics, etc.
- **Student Assessment:** Design exams, assignments, and projects; grade and provide feedback to students on their academic performance.
- **Mentorship:** Guide students in academic, career, and project work; support them in internships, hackathons, and industry collaborations.
- **Research Projects:** Conduct independent and collaborative research in the field of geoinformatics.
- **Supervising Research:** Supervise undergraduate students in their dissertations, projects, or research work.
- Contributed to the assessment process across various subjects, providing valuable feedback on interdisciplinary research and ensuring a comprehensive understanding of geospatial concepts.

- **Teaching Assistant, Indian Institute of Technology (Indian School of Mines), Dhanbad,**

2017-2023

Duties involved

- Gave support to the students in Surveying, Advanced Surveying, Remote Sensing and Image Processing, Applications of GIS, and Modelling and Analysis of Geospatial Data through effective problem-solving, doubt clearance sessions, and preparation of assignment questions.
- Facilitated practical sessions, guiding students in applying geospatial tools in real-world scenarios for enhanced learning.
- Contributed to the assessment process across various subjects, providing valuable feedback and ensuring a comprehensive understanding of geospatial concepts.

Course instructor: Prof. Vasanta Govind Kumar Villuri

- **Teaching Assistant, Indian Institute of Technology (Indian School of Mines), Dhanbad,**

2016-2017

Duties involved

- Conducted engaging, practical sessions for students in Surveying, Advanced Surveying, and Geospatial classes, fostering hands-on learning experiences.

- Demonstrated the application of surveying techniques and geospatial software such as ArcGIS, ERDAS Imagine, QGIS, and other applications, ensuring students gained practical skills relevant to their coursework.
- Assisted in preparing course materials and supporting students, contributing to their mastery of practical aspects of Surveying and Advanced Surveying.

Course instructor: Prof. Vasanta Govind Kumar Villuri

Patent

- **SYSTEM FOR CLOUDBURST EVENT FORECASTING USING CONVOLUTIONAL NEURAL NETWORK (CNN) AND GRAMIAN ANGULAR FIELD (GAF)**
  Application no: 202311037799
  Published: 2023-07-07

Publications

Peer-reviewed Published Manuscripts

- Saha, A., Villuri, V.G.K., Bhardwaj, A. and Kumar, S., 2023. **A Multi-Criteria Decision Analysis (MCDA) Approach for Landslide Susceptibility Mapping of a Part of Darjeeling District in North-East Himalaya, India**. Applied Sciences, 13(8), p.5062. https://doi.org/10.3390/app13085062 **(IF = 2.7, Q2, Web of Science)**
- Saha, A., Villuri, V.G.K. and Bhardwaj, A., 2022. **Development and Assessment of GIS-Based Landslide Susceptibility Mapping Models Using ANN, Fuzzy-AHP, and MCDA in Darjeeling Himalayas, West Bengal, India.** Land, 11(10), p.1711. https://doi.org/10.3390/land11101711 **(IF = 3.9, Q2, Web of Science)**
- Saha, A., Villuri, V.G.K. and Bhardwaj, A., 2023. **Development and Assessment of a Novel Hybrid Machine Learning-based Landslide Susceptibility Mapping Model in The Darjeeling Himalayas.** Stochastic Environmental Research and Risk Assessment. https://doi.org/10.1007/s00477-023-02528-8 **(IF = 4.2, Q2, Web of Science)**
- Saha, A., Tripathi, L., Villuri, V.G.K. and Bhardwaj, A., 2024. **Exploring Machine Learning and Statistical Approach Techniques for Landslide Susceptibility Mapping in Siwalik Himalayan Region using Geospatial Technology.** Environmental Science and Population Research. https://doi.org/10.1007/s11356-023-31670-7 **(IF = 5.8, Q1, Web of Science)**
- Dey, S., Das, S., Saha, A., 2025. **Exploring Uncertainty Analysis in GIS-based Landslide Susceptibility Mapping Models Using Machine Learning in the Darjeeling Himalayas.** Earth Science Informatics. https://doi.org/10.1007/s12145-024-01561-7 **(IF = 2.7, Q2, Web of Science)**

Manuscript under review

- Saha, A., Tripathi, L., Villuri, V.G.K. and Bhardwaj, A., Kumar, S., Agarwal, A., 2024. **Quantifying Landslide Susceptibility Zones in Shivalik Himalayas Region using**

Geospatial Techniques. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing. **(IF = 5.5, Q1, Web of Science)** (Under Review)

- Layek, S., Sharma, A., Sharma, U., Sharma, Y., Bhushan, M., Saha, A., 2025. **Development and Assessment of a Novel Artificial Intelligence based Underground Coal Fires Model using Multispectral Satellite Imagery in Jharia, India.** Environmental Earth Science. **(IF = 2.8, Q2, Web of Science)** (Under Review)

Conference Proceeding

- Saha, A.; Villuri, V.G.K.; Bhardwaj, A. **Assessment and preparation of landslide susceptibility zonation map by geospatial method using remote sensing and GIS.** In Proceedings of the ACRS 2020—41st Asian Conference on Remote Sensing, Deqing, China, 9–11 November 2020; Volume 1–3, pp. 461–470.

Conferences

- Saha, A.; Villuri, V.G.K.; Bhardwaj, A. **"Assessment and Preparation of Landslide Susceptibility Zonation Map by Geospatial Method using Remote Sensing and GIS"** in the ACRS 2020—41st Asian Conference on Remote Sensing, Deqing, China, 9–11 November 2020.

- Tripathi, L., Saha, A.; Villuri, V.G.K.; Bhardwaj, A., **"A GIS-based Landslide Susceptibility Mapping to Highlight Potential Hazard Zones in Nainital District"** In the conference ISRS-ISG National Symposium, held on 15-17 November 2022 at HICC-Hyderabad which NRSC, ISRS-Hyderabad Chapter, organised.

- Saha, A.; Villuri, V.G.K.; Bhardwaj, A. "**A Fuzzy-based Landslide Susceptibility Mapping in The Siwalik Himalayas, India"** in the 3SM 2023— International Conference on Safe Smart and Sustainable Mining (3SM), held on 16–18 December 2023 at Marriott Goa, Benaulim, Goa, India.

Workshop / Training

- Workshop on TerraSAR software organised by Dept. of Mining Engineering at IIT(ISM), Dhanbad, December 2019.
- Indo-French Workshop on Statistics and Artificial Intelligence for Data Science, organised by Centre for Artificial Intelligence and Machine Learning, ISI Kolkata and Indo-French Centre for Applied Mathematics, January 2020.
- One-month Survey Camp on Surface Surveying (using the compass, theodolite and other tools), Modern Surveying Techniques, GPS, and GIS. Technologies used in underground surveying (correlation surveying, underground tracing and levelling) and basic astronomical surveying organised by IIT(ISM), Dhanbad.

Bibliometric: Citations: 82, H-index: 4

Computer Skills

- **Language:** C, MATLAB, Python.
- **Software:** Visual Studio, Eclipse. ArcGIS, MATLAB, SPSS-IBM, QGIS.

Achievements

- Runner Up in an Autonomous Robotics event in PRAYUKTI, Annual Techno-Management Fest HIT, 2013.
- Awarded 3rd position at an intra-school athletic meet in the Long Jump event in 2007.

Extracurricular activities

- Held the position of Secretary (Maintenance) of Hostel Executive Committee (HEC) Opal Hostel, IIT(ISM), Dhanbad, during the year 2018-2021.
- Held the position of President of Hostel Executive Committee (HEC) Opal Hostel, IIT(ISM), Dhanbad, from 2021 to 2022.
- Held the position of President of Hostel Executive Committee (HEC) Diamond Hostel, IIT(ISM), Dhanbad, from 2022 to Nov 2023.
- Held the coordinator position in the event "RANBHOOMI" during the national-level techno-management fest 'PRAYUKTI' 2014 at Haldia Institute of Technology.
- Held the position of Co-ordinator BOKEH- a photographic contest during the Annual cultural fest RIVIERA 2014 at Haldia Institute of Technology.

Language

- Bengali
- English
- Hindi

Hobbies

- Playing Football, Cricket, Computer Games, Cooking

References

1. **Prof. Vasanta Govind Kumar Villuri**
   Associate Professor and Head Regional Centre of Geodesy
   Course co-ordinator Geomatics
   Indian Institute of Technology (Indian School of Mines), Dhanbad, Jharkhand. 826004
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2. **Dr. Ashutosh Bhardwaj**
   Head, Research Project Monitoring Department and Scientist/Engineer – SF
   Indian Institute of Remote Sensing ISRO, Govt. of India, 4, Kalidas Road, Dehradun-248001 India.
   Email id: ashutosh@iirs.gov.in,
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