CURRICULUM VITAE

Dr. Amit Kumar Bera, (Ph.D., M.Tech. & B.Tech.)
Assistant Professor (Civil Engineering)
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OBJECTIVE

A passionate Civil Engineering professional with over 12 years of experience in the domains of teaching, research, and academic administration, with strong analytical skills and comprehensive expertise in nanotechnology, materials science, application of AI/ML in infrastructure projects, sustainable pavement design, and future-ready sustainable infrastructure. I firmly believe that any problem can be solved with the right blend of technology, work ethics, teamwork, and effective communication. My aim is to achieve professional excellence by taking on challenging and rewarding responsibilities in a dynamic organization, where my research, management, and technical skills can significantly contribute to future developments and institutional growth.

Work Experience

August 2013- till date	Assistant Professor (Civil Engineering) ICFAI Tech School, The ICFAI University, Dehradun, India
October 2023 - till date	Deputy Director, Internal Quality Assurance Cell (IQAC) The ICFAI University, Dehradun

Education and Qualification

August 2025	**Ph.D. (Civil Engineering)** **The ICFAI University, Dehradun, India** Thesis Title: Fabrication, characterization and application of advanced Nano-clay composite materials in soil subgrade for sustainable development of highway.
July 2011-May 2013	**M.Tech. (Transportation Engineering)** **Indian Institute of Technology, Roorkee, (IITR), India** Thesis Title: Performance evaluation of silty sand subgrade reinforced with pine needle and fly ash.
July 2007-May 2011	**B.Tech. (Civil Engineering)** **Narula Institute of Technology (NIT), Kolkata, India** Thesis Title: A multi-attribute decision making based approach for material mix design.
June 2004- May 2006	**10+2th Science (Physics, Chemistry, Mathematics, Biology, English)** Gobardhanpur Pramathanath Vidyayatan, Paschim Medinipur, West Bengal, India
April 2003- May 2004	**10th Science (Science, Mathematics, English, Bengali)** Bikrampur High School, Paschim Medinipur, West Bengal, India

Project Completed

- Cross-check design assessment of a flexible pavement for an existing road in New Delhi, India using MX Road software for design evaluation and verification.
- Design and detailed structural analysis of a reinforced concrete two-storied office building.
- Truss analysis of a factory shed using the method of joints.

Teaching Interest

Undergraduate Level:

Fundamentals and professional core courses of Civil Engineering such as

- Advanced highway materials and construction
- Soil mechanics and foundation engineering
- Ground improvement technique
- Pavement analysis and design
- Pavement evaluation and management
- Mechanics of materials
- Nanotechnology and Nano science
- Environmental science & SDGs

Post Graduate Level:

- Advanced highway materials and construction
- Ground improvement engineering
- Planning, design and construction of rural roads
- Intersection design and analysis
- Transportation modeling and simulation
- Traffic engineering and transportation planning

Research Interests

Nanotechnology & Materials Science, Application of AI/ML in Infrastructure Projects, Sustainable Pavement Design, Pavement performance modeling, Resilient and Future-ready Sustainable Infrastructure.

Administrative Responsibilities

- Deputy Director, IQAC, The ICFAI University, Dehradun (October 2023 to till date).
- Registration Coordinator, ICFAI Tech School, The ICFAI University, Dehradun (July 2016 to till date).
- Admission Coordinator, The ICFAI University, Dehradun (April 2017 to August 2019).
- Head of the Department, Civil Engineering (June 2016 to till date).
- NAAC- Criteria-5 In-Charge at Departmental Level. 2019.

Awards & Achievements

- Awarded the "Outstanding Administrative Support Award" on Teachers' at The ICFAI University, Dehradun, for remarkable contributions to the Internal Quality Assurance Cell (IQAC) on September 5, 2025
- Awarded the "Second-Best Paper Presentation" under the Interdisciplinary Category at Wilson College (Autonomous), Science Departments, Mumbai, India, on December 05, 2023.
- Awarded "Young Scientist Award" in 15th Uttarakhand State Science and Technology (UCOST) Congress 2020-22, under the discipline Material Science and Nano Technology on June 24, 2022.
- Awarded "Teacher of the year 2022" by Hon'ble Chief Minister of Uttarakhand, Shri Pushkar Singh Dhami at VMSB Uttarakhand Technical University, Dehradun on September 5, 2022.

- Received “Best Teacher Award 2021” for the academic year 2020-21 by the ICFAI University Dehradun on September 5, 2021.
- MHRD Fellowship 2011-2013, IIT Roorkee.
- IIT GATE Entrance, AIR-297, May, 2011.

Refereed Journal Publications

1. Bera, A. K., Singh, R. K., & Mandal, T. K. (2025). Investigation on use of nanoclay for sustainable subgrade construction. Journal of Informatics Education and Research, 5(2), 762–774. https://doi.org/10.52783/jier.v5i2.2504
2. Bera, A. K., Singh, R. K., & Mandal, T. K. (2025). Soft computing-based machine learning models for predicting swell strength of nanoclay stabilized soils. In Proceedings of World Conference on Artificial Intelligence: Advances and Applications (WCAIAA 2025) (Vol. 4, Lecture Notes in Networks and Systems). Springer Nature.
3. Amit K. Bera, Tanmoy Mukhopadhyay, Ponnada J. Mohan, Tushar K. Dey (2017), “A Multi-Attribute Decision Making Approach of Mix Design Based on Experimental Soil Characterization” Journal of Frontiers of Structural and Civil Engineering (Springer), Accepted Mar 20, doi.org/10.1007/s11709-017-0425-7.

Manuscripts Under Review

1. Bera, A. K., Singh, R. K., & Mandal, T. K. Numerical simulation of intelligent mix design for subgrade construction based on experimental soil characterization, International Journal of Pavement Research & Technology. Springer. (Manuscript under review).
2. Bera, A. K., Singh, R. K., & Mandal, T. K. Microstructural and geotechnical enhancement of expansive soils using nanoclay: An experimental investigation. Asian Journal of Chemistry. Scopus index (Q4). (Manuscript communicated).

Conferences National and International

1. Bera, A. K., & Mandal, T. K. (2022, June 22-24). Role of CuO nanomaterials for the enhancement of strength of clayey soil. 15th Uttarakhand State Science and Technology Congress (USSTC) 2020–21: Material Science and Nano Technology, Graphic Era University, Dehradun, India.
2. Bera, A. K., Singh, R. K., & Mandal, T. K. (2023, December 1-2). Micro mechanism of nano-clay stabilized soil: A sustainable material for subgrade construction. 4th International Conference on Emerging Developments in Engineering & Technology (ICEDET 2023), Department of ME & CSE, Shivalik College of Engineering, Dehradun, India.
3. Bera, A. K., Singh, R. K., & Mandal, T. K. (2023, December 4-5). Numerical simulation of subgrade soil by using ABAQUS intelligent compaction technique: A sustainable development approach. Interdisciplinary National E-conference on Scientific Approaches for Sustainable Environment, All Science Departments, Wilson College (Autonomous), Mumbai, India.
4. Bera, A. K., Singh, R. K., & Mandal, T. K. (2025, June 13–14). Soft computing-based machine learning models for predicting swell strength of nanoclay stabilized soils. 5th International Conference on Intelligent Vision and Computing (ICIVC 2025), The ICFAI University, Dehradun, India.
5. Bera A. K., Kumar S., & Arya M. K. (2022), “A bibliometric analysis on machine learning applications for sustainable automobile supplier selection” 4th National Conference on Recent Innovations in Emerging Technology & Science, July 1-2, at JBIT, Dehradun, India.

6. Bera A. K., Kumar R., & Shome U. (2016), “Comparative study on bituminous modification for flexible pavement with wall plaster and hydrated lime” National Conference of PMGSY, August 6- 7, Indian Institute of Technology, Roorkee, India.
7. G. D. Ransinchung R. N., Kumar P., & Bera A. K. (2013), “Performance evaluation of silty sand subgrade reinforced with pine needle” 2nd International Conference on Emerging Trends in Engineering & Technology, April 12- 13, College of Engineering, Teerthanker Mahaveer University, India.

Technical Skills

Computer Languages: Python & R Programming

Tools: Finite element analysis, IIT PAVE software, MX Road, STAAD pro., AutoCAD, XLSTAT software.

Operating Systems: Windows

Documentation skill: Latex.

Strengths

1. Effective leadership with proven ability to guide and motivate teams.
2. Strong multitasking and organizational capabilities.
3. Collaborative professional with excellent teamwork skills.
4. Highly adaptable with a quick learning aptitude.
5. Strong verbal and written communication skills in English, Hindi and Bengali.

Languages

1. **English:** Full professional proficiency
2. **Hindi:** Full professional proficiency
3. **Bengali:** Full professional proficiency

Personal Details

Date of Birth:	28th August 1988
Marital Status:	Married
Sex:	Male
Nationality:	Indian
Father's Name:	Mr. Sakti Pada Bera
Mother's Name:	Mrs. Namita Bera

REFERENCES

Prof. (Dr.) Ram Karan Singh (PhD Supervisor)

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Prof. (Dr.) G.D. Ransinchung R.N. (M. Tech Supervisor)
Professor, Department of Civil Engineering,
Indian Institute of Technology Roorkee, India, PIN - 247667
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Prof. (Dr.) Praveen Kumar (M. Tech. Co-Supervisor)
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Prof. (Dr.) M. Parida (Former Dy. Director, IITR)
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DECLARATION

I hereby declare that the information given above is true to the best of my knowledge

Dr. Amit Kumar Bera