

# CURRICULUM VITAE

## BHIM KUMAR DAHAL

### PERSONAL DETAILS:

Sex:	Male
Marital status:	Married
Nationality:	Nepalese
Date of birth:	9 <sup>th</sup> Dec 1979
Permanent address:	Baiteshwor-3, Dolakha, Nepal
Present resident address:	Sallaghari, Bhaktapur, Nepal
Present office address:	Institute of Engineering, Pulchowk Campus, Nepal
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### EDUCATION:

- **PhD in Geotechnical Engineering**, 2019, Huazhong University of Science and Technology, Wuhan, PR China
- **MSc in Geotechnical Engineering** (Distinction), 2011, Institute of Engineering, Pulchowk Campus
- **B.E. Civil** (Distinction), 2003, Institute of Engineering, Pulchowk Campus.

### MEMBER IN PROFESSIONAL BODIES:

- Nepal Engineering Council : 3759 civil 'A'
- Nepal Engineering Association : 6447 "Life member"
- Nepal Geotechnical Society : Life member

### KEY QUALIFICATION:

Geotechnical Engineer with over 21 years of combined academic, research, and practical experience in infrastructure development, geotechnical investigations, slope stabilization, foundation design, deep excavation, and geohazard risk assessment. Holds a PhD in Geotechnical Engineering and has contributed extensively to donor-funded and government projects, providing both technical expertise and capacity-building initiatives. Adept at applying international best practices and advanced geotechnical modeling tools. Experienced in collaborating with universities and institutions from the UK, Portugal, China, Taiwan, India, Estonia, Poland, Italy, Pakistan, and Bangladesh. Completed advanced training on slope disaster management in Taiwan and subsequently delivered specialized training to Nepali engineers. Skilled in working effectively with people from diverse cultures, backgrounds, races, and nationalities, fostering inclusive, respectful, and productive professional relationships across multidisciplinary and multicultural teams.

### PROFESSIONAL EXPERIENCES:

**From:** April 2019

**To:** Till date

**Name of University:** Institute of Engineering, Pulchowk Campus

**Position Held:** Assistant Professor/Former DHoD/CIMDU-Chief

#### Major Tasks Performed:

I am actively engaged in multiple administrative duties while also teaching a range of courses in both the BE and MSc programs. Additionally, I supervise thesis and project work. Moreover, I've been selected by both the campus and IoE to serve as a Geotechnical expert for several esteemed institutions, including the National Reconstruction Authority (NRA), the National Disaster Risk Reduction and Management Authority (NDRRMA), Purbanchal University, Pokhara University, and Mid-Western University. In my capacity as the chief of the Curriculum and Instructional Material Development Unit (CIMDU), I play a crucial role in organizing workshops and seminars to enhance and update the curriculum at the Institute of

Engineering. Furthermore, I've been involved in numerous research and studies conducted across various centers and sections as presented below:

**Institute of Engineering Pulchowk Campus:**

- **Co- Investigator:** " Influence of calcareous soil bacteria on biocementation based soil stabilization," which is funded under the Research Grant No: CRG-79/80-Engg-01, University Grant Commission. [2080-2082]

**Key features:** Investigate the feasibility of bacterial induced calcite precipitation as a ground improvement measures for the sand and fine sand from Kathmandu.

**Research and Training Unit, Department of Civil Engineering:**

- **Principal Investigator:** "Slope investigation, stability analysis and monitoring of Guthitar Landslide along Dharan-Dhankuta Road" In collaboration with Department of Roads (DoR). [2078-2080]

**Key features:** Investigate the chronic landslide through geological, geophysical, geotechnical investigation, analyse the slope and design the appropriate short-term and long-term mitigation measures. In addition to this, slope monitoring using inclinometer, rain gauge and groundwater table is the key features of the study.

- **Geotechnical expert:** Study of root causes of bridge failure and development of mitigation plan for the Triyuga bridge at Sibway.

**Institute of Engineering Consultancy Services:**

- **Geotechnical expert:** Stability analysis and design of support system for deep excavation for the construction of reinsurance building in Shantinagar Kathmandu.
- **Geotechnical expert:** Detailed geotechnical exploration and analysis for the construction 2000 beds speciality hospital complex of IoM, TU at Balkhu, Kathmandu.

**Centre for Disaster Studies (CDS):**

- **Geotechnical expert:** Training to engineers on slope stabilization techniques in collaboration with WRRDC, Kathmandu.
- **Co-Investigator:** "Development of Guidelines for Road Side Excavation Slopes" in collaboration with Durham University, UK.

**Centre for Water Studies (CWS):**

- **Geotechnical Expert:** Soil erosion, reservoir sedimentation and slope stability assessment of Dhap Dam.

**From:** Sept 2015

**To:** Dec 2018

**Name of University:** Huazhong University of Science and Technology

**Position Held:** PhD scholar

**Major Tasks Performed:**

I have involved on planning, designing and conducting the research on soft soil improvement and its application to deep excavation. My research is focus on chemical stabilization of soft clays from different sources i.e. marine dredge clay, a soft deposit in Kathmandu valley in Nepal and a lake deposit in Wuhan, China. The behaviour of the cement stabilized clays was studied using the different laboratory procedures. These experimental studies reveal that mechanical behaviour of the treated clays is mainly depending on type of soils, type of additives and the curing condition. Furthermore, the model parameters were determined and implemented on the FLAC 3D platform to perform the numerical simulation of deep excavation.

**From:** Jan 2011

**To:** Sept 2015

**Name of Employer:** Nepal Engineering College, Changunarayan, Bhaktapur

**Position Held:** Assistant Professor

**Major Tasks Performed:**

Conducted lecture, tutorial & practical classes of Soil mechanics, Foundation Engineering, Surveying & Transportation Engineering and final year project supervision as assigned by Department of Civil Engineering nec-CPS, nec-Chnagarayan and nec-BDH.

**From:** Nov 2008

**To:** Nov 2010

**Name of Employer:** Consortium of WSP International, GEOCE Consultants (P) Ltd. and Helvatas Nepal

**Project Name and Location:** Rural Access Programme (RAP) – Phase2 funded by DFID.

**Position Held:** District Engineering Officer.

**Major Tasks Performed:**

- Conducted detailed engineering surveys, designs, drawings, and cost estimates for two district roads (38 km: Kamalbazaar–Jungleghat 15 km, Timilsen–Ramroshan 23 km).
- Studied, designed, and implemented low-cost, eco-friendly roadside slope mitigation measures.
- Coordinated with DDC/DTO for supplementary infrastructure (irrigation, water supply, community buildings).
- Supervised and monitored construction/rehabilitation works by local supervision consultants.
- Trained consultants and community members on environmentally friendly construction practices.
- Developed and enforced a quality assurance framework for goods, services, and construction.
- Ensured compliance with occupational health and safety standards.
- Managed procurement of goods and services.

**From:** Jan, 2004

**To:** April 2006

**Name of Employer:** CEMECA Consultant Pvt. Ltd.

**Position Held:** Inspector of Works/ Acting Team leader

**Project Name and Location:** Rural Access Programme (Khotang and Achham)

**Major Tasks Performed:**

- Conducted detailed engineering surveys, design, and cost estimation for Diktel–Chayandanda District Road and Mangalsen–Loadeghat District Road (Mangalsen–Kuntibandali section).
- Carried out a feasibility study for Mangalsen–Loadeghat District Road (Kuntibandali–Loadeghat section).
- Studied, designed, and implemented low-cost, eco-friendly roadside slope mitigation measures to improve road stability.
- Supervised construction activities including layout for earthwork, dry wall, and gabion wall, ensuring quality control of works.
- Provided technical training to local supervisors and hands-on training to Road Building Group (RBG) members.
- Measured work progress and prepared payment bills for various RBGs.
- Coordinated with multiple stakeholders, including local communities and government agencies.

**Short-term (Intermittent Input)**

**From:** April, 2006

**To:** Nov 2008

**Name of Employer:** QS Technical (P.) Ltd.

**Position Held:** Program Coordinator/Engineer

**Project Name and Location:** Infrastructure for Income (INFRIN), Funded by USAID.

**Major Tasks Performed:**

- Coordinated the implementation of irrigation schemes in Achham, Doti, Darchula, and Dadeldhura districts under the INFRIN project funded by USAID.
- Conducted detailed engineering surveys, design, and cost estimation for the Telkot–Mudbhara Road.
- Designed and implemented low-cost, eco-friendly roadside slope mitigation measures to enhance road stability.
- Supervised and monitored quality of construction and construction site safety.
- Prepared monthly, half-yearly, and annual progress reports for project monitoring.
- Managed invoicing and payment processes for Road Building Group (RBG) members.

Coordinated with various stakeholders including local communities, government agencies, and project partners.

**From:** Dec 2010

**To:** Sept 2015

**Name of Employer:** NGC Lab Pvt Ltd.

**Position Held:** Geotechnical Engineer/Geotechnical Expert

- Study for Site Selection, Detailed Engineering Survey, Geotechnical/Hydrological Investigation & Detailed Design of the Appropriate River Crossing in different Districts.
- Detailed geotechnical exploration and analysis for construction of residential buildings, commercial, institutional buildings; Municipal buildings, university complex and hospital buildings
- Analysis and design of support system for deep excavation
- Detailed geotechnical exploration and analysis for construction of Hydropower project.
- Detailed geotechnical exploration, slope stability analysis and mitigation design of landslides or unstable slopes

**Water Resource Research and Development Center:** Detailed Survey and Study of Gurje Landslide and Preparation of Master Plan for the Countermeasures, as a **Team Leader** (Feb 2023 to July 2023)

**National Reconstruction Authority (NRA):** Development of Training Manual, Hands-on training to engineers on slope stabilization, as **Team Leader** of the expert team (March to July 2021)

**Rural Access Programme (RAP-3):**

- Detailed engineering survey, design and cost estimate of Gamgadhi-Chankheli-Darma Road as **design engineer**, August 2015. The road was designed focusing on the labour intensive construction, low-cost and eco-friendly approach.
- Road condition assessment for conservation works of District Road Core Network (187km) of Jumla District as **Team Leader**, July 2013. This assignment was focused on the assessment of roadside slope instabilities and the road surface condition
- Feasibility study of Gamgadhi-Dhaina Rural road (40km) as **Team Leader**, Aug 2013. The road alignment was selected such that labour intensive eco-friendly construction approach shall be implemented

**TRAININGS AND CAPACITY BUILDING:** Delivered and attended multiple technical trainings

- **Training to Sub-Engineer and Assistant Sub-Engineer for Resilient Development Works**, as Geotechnical Engineer of the expert team, National Reconstruction Authority (NRA) (November to December 2021).
- **Hands-on training to engineers on slope stabilization**, as Team Leader of the expert team, National Reconstruction Authority (NRA) (September to December 2021).
- **"2014 summer training course for slope land disaster reduction"**, 4 -15 Aug 2014, Organized by National Taiwan University, Taipei, Taiwan.
- **"Training in Geotechnics"** Sept 25 – Oct 04 2013, Organized by Local Roads Bridge Programme.
- "Basic Risk Management Training" 12th –15th Aug 09 at Kathmandu, Organized by Risk Management Office (RMO, DFID-GTZ).
- 5-days training on **"Green Road Construction, Bio-engineering and Rural Road Maintenance"** conducted by GTZ Cluster-I, Dadeldhura.
- **AutoCAD and Auto Lisp**, Conducted by RTU, Pulchowk Campus
- 7-days **"Micro-hydro training"** conducted by REDP, Dolakha.
- 3-months training on **"Microsoft office application program"**, PELA, Patan Dhoka

## PUBLICATIONS

- [1] **Dahal, B. K.**, Baidya, P., Dahal, D., KC, D. Improved Soil Behavior: A Case Study of Reconstituted Soil from Khasibazar, Kathmandu. Journal of Engineering Issues and Solutions **2025**, 4(1), 41–55. <https://doi.org/10.3126/joeis.v4i1.81563>
- [2] Pangeni, K., Dhakal, K., K.C., D., **Dahal, B.K.\*** Landslide monitoring using PS-InSAR: a cost-effective approach for the Himalayas. Discover Applied Sciences **2025**, 7, 702. <https://doi.org/10.1007/s42452-025-07343-0>

- [3] Niraula, U., **Dahal, B.K\***, Acharya, S., Phuyal, P. High-Plasticity Silt Stabilization: Role of Waste Stone Dust, Cement, and Curing Time. *Results in Engineering* **2025**, 104877. <https://doi.org/10.1016/j.rineng.2025.104877>
- [4] Robson, E., **Dahal, B.K.**, Toll, D. A participatory approach to determine the use of road cut slope design guidelines in Nepal to lessen landslides. *Nat. Hazards Earth Syst. Sci.* **2025**, 25, 949–973. <https://doi.org/10.5194/nhess-25-949-2025>
- [5] Lamichhane, S., Kansakar, A.R., Devkota, N., **Dahal, B.K\***. Integrating dynamic factors for predicting future landslide susceptibility. *Environ Earth Sci* **2025**, 84, 89. <https://doi.org/10.1007/s12665-025-12094-7>
- [6] **Dahal, B.K.**, Gautam, P. R., Adhikari, B. R., Lamichhane, S. Dynamics of active landslide along central Himalayan route: A case study of Guthitar landslide, Dhankuta, Nepal. *Journal of Nepal Geological Society* **2024**, 67(1), 1–10. <https://doi.org/10.3126/jngs.v67i1.74579>
- [7] Basnet, J.M., Baidya, P., **Dahal, B.K\***. Evaluation of groundnut shell for enhancing geotechnical performance of weak soil. *Journal of Engineering Issues and Solutions* **2024**, 3(1), 1–9. <https://doi.org/10.3126/joeis.v3i1.61575>
- [8] **Dahal, B.K\***, Paudel, B., Pandit, A., et al. Numerical Analysis of Load-sharing Behavior of Combined Pile Raft Foundation System. *Journal of Engineering Technology and Planning* **2024**, 5(1), 14–26. <https://doi.org/10.3126/joetp.v5i1.69648>
- [9] **Dahal, B.K.**, Regmi, S., Paudyal, K., Dahal, D., KC, D. Enhancing Deep Excavation Optimization: Selection of an Appropriate Constitutive Model. *CivilEng* **2024**, 5, 785–800. <https://doi.org/10.3390/civileng5030041>
- [10] Poudyal, D.; Nordin, N.; Roslan, S. N. A.; **Dahal, B.K.** Spatial mapping of the seismic vulnerability index in Kathmandu Valley: insight from dominant frequency and amplification factor. *Journal of Geophysics and Engineering* **2024**, 21 (4), 1272–1285. <https://doi.org/10.1093/jge/gxae069>
- [11] **Dahal, B.K\***, Zheng, J. J. Comprehensive analysis of cement-stabilised dredged marine soil: Evaluating physical, microstructural, and mechanical characteristics. *Ministry of Science and Technology, Vietnam* **2024**, 66(2), 52–60. [https://doi.org/10.31276/vjste.66\(2\)](https://doi.org/10.31276/vjste.66(2))
- [12] KC, D.; **Dahal, B.K.**, Dang, H. Methods to Increase Fatigue Life at Rib to Deck Connection in Orthotropic Steel Bridge Decks. *CivilEng* **2024**, 5, 288–306. <https://doi.org/10.3390/civileng5010015>
- [13] Pyakurel, A., K.C., D., **Dahal, B.K\***. Enhancing co-seismic landslide susceptibility, building exposure, and risk analysis through machine learning. *Sci Rep* **2024**, 14, 5902. <https://doi.org/10.1038/s41598-024-54898-w>
- [14] KC, R., Sharma, K., **Dahal, B.K.** et al. Study of the spatial distribution and the temporal trend of landslide disasters that occurred in the Nepal Himalayas from 2011 to 2020. *Environ Earth Sci* **2024**, 83, 42. <https://doi.org/10.1007/s12665-023-11347-7>
- [15] **Dahal, B.K.**, Pokhrel, S., Basnet, S., Dahal, U., Sah, S. K., Neopane, S., Adhikari, S., and Timalina, S. Effects of Pore Fluid's pH on the Physico-Mechanical Behavior of High Plasticity Silt. *Ecological Engineering & Environmental Technology* **2023**, 24(8), pp.202-215. <https://doi.org/10.12912/27197050/171568>
- [16] Gupta, S. K., **Dahal, B.K\***. Finite Element Analysis on Load-Settlement Behavior of Axially Loaded Pile on Sand. *Journal of Engineering Technology and Planning* **2023**, 4(1), 72–81. <https://doi.org/10.3126/joetp.v4i1.58443>
- [17] Acharya, S., Niraula, U., **Dahal, B.K\***. Improving Soft Clay Behavior with Alkali-Activated Waste Eggshell for Sustainable Ground Engineering. *Int. J. of Geosynth. and Ground Eng.* **2023**, 9, 61. <https://doi.org/10.1007/s40891-023-00480-9>
- [18] Baidya, P., **Dahal, B.K.**, Pandit, A., Joshi, D. R. Bacteria-Induced Calcite Precipitation for Engineering and Environmental Applications, *Advances in Materials Science and Engineering* **2023**, 2613209, 25 pages, **2023**. <https://doi.org/10.1155/2023/2613209>
- [19] Gyawali, I., Malla, B., Poudyal, K. N., **Dahal, B.K\***. Change in Landslide susceptibility over time in the central Himalayan region: A case study of Siddhababa Area.

- Advances in Engineering and Technology: An International Journal **2023**, 3(1), 121–138. <https://doi.org/10.3126/aet.v3i1.60726>
- [20] Paudyal, P., Dahal, P., Bhandari, P., **Dahal, B.K\***. Sustainable rural infrastructure: guidelines for roadside slope excavation. *Geoenvironmental Disasters* **2023**, 10(1), 11. <https://doi.org/10.1186/s40677-023-00240-x>
- [21] Pradhan, P., **Dahal, B.K\***. Landslide Susceptibility Analysis of Jugal Rural Municipality, Sindhupalchok. *Journal of Science and Engineering* **2023**, 10, 49–57. <https://doi.org/10.3126/jsce.v10i1.61019>
- [22] Pyakurel, A., **Dahal, B. K.**, Gautam, D. Does machine learning adequately predict earthquake induced landslides? *Soil Dynamics and Earthquake Engineering* **2023**, 171, 107994. <https://doi.org/10.1016/j.soildyn.2023.107994>
- [23] Dahal, B. K., Pokhrel, S., Basnet, S., Dahal, U., Sah, S. K., Neopane, S., Adhikari, S., & Timalsina, S. (**2023**). Effects of pore fluid's pH on the physico-mechanical behavior of high plasticity silt. *Ecological Engineering & Environmental Technology*, 24(8), 202–215. <https://doi.org/10.12912/27197050/171568>
- [24] Thapa, S., Karna, A. K., & Dahal, B. K. (**2022**). Evaluation of Different Landslide Susceptibility Analysis Methods: A Case Study of Bagmati Rural Municipality. *Journal of Engineering Technology and Planning*, 3(1), 44–59. <https://doi.org/10.3126/joetp.v3i1.49607>
- [25] Cui, M. J., Zheng, J. J., Dahal, B. K., Lai, H. J., Huang, Z. F., & Wu, C. C. (**2021**). Effect of waste rubber particles on the shear behaviour of bio-cemented calcareous sand. *Acta Geotechnica*, 16(5), 1429–1439. <https://doi.org/10.1007/s11440-021-01176-y>
- [26] Dahal, B. K., Zheng, J.-J. J., & Zhang, R.-J. J. (**2019**). Evaluation and Modelling of the Reconstituted Clays Considering Pre-peak Stiffness Degradation. *International Journal of Geosynthetics and Ground Engineering*, 5(2), 9. <https://doi.org/10.1007/s40891-019-0159-9>
- [27] Dahal, B. K., Zheng, J.-J. J., Zhang, R.-J. J., & Song, D.-B. B. (**2019**). Enhancing the mechanical properties of marine clay using cement solidification. *Marine Georesources and Geotechnology*, 37(6), 755–764. <https://doi.org/10.1080/1064119X.2018.1484532>
- [28] Dahal, B. K., & Zheng, J.-J. (**2018**). Compression behavior of reconstituted clay: A study on black clay. *Journal of Nepal Geological Society*, 55(1), 55–60. <https://doi.org/10.3126/jngs.v55i1.22789>
- [29] Dahal, B. K., Zheng, J. J., & Zhang, R. J. (**2018**). Experimental investigation on physical and mechanical behavior of Kathmandu clay. *Advanced Materials Research*, 1145, 112–116. <https://doi.org/10.4028/www.scientific.net/AMR.1145.112>
- [30] Dahal, B. K., & Dahal, R. K. (**2017**). Landslide hazard map: tool for optimization of low-cost mitigation. *Geoenvironmental Disasters*, 4(1), 8. <https://doi.org/10.1186/s40677-017-0071-3>

## SEMINAR/WORKSHOPS

- One day workshops on "**Soil Bioengineering Practices and Experiences: Challenges to Implementation**" Organized by TU, IOE Campus in association with University of Natural Resources and Applied Life Sciences, Vienna, Austria.
- The 11<sup>th</sup> International Symposium on Mitigation of Geo-disasters in Asia (**MGDA-11**), 22-28 October 2013, Nepal.
- The International Symposium on Science, Engineering, and Management of Geohazards (Geohazards: Science, Engineering, and Management), "**Geohazards 2014**" 20-21 November 2014, Nepal.
- 3rd International Conference on Advanced Material and Engineering Structural Technology, November 17-19, 2017, Nanjing, China.
- 11th IAEG Asian Regional Conference (ARC-11) "Engineering Geology for Geodisaster Management", Presenter, November 28-30, 2017, Kathmandu, Nepal
- First Himalayan Engineering Geological Congress, Organizer, 12-13 May 2019, Kathmandu.

- "Road slope symposium 2022" organized by Newcastle University, UK, August 15-16, 2022.
- "1st Geomandu 2023", organizer, Nepal Geotechnical Society, March 16-17, 2023, Kathmandu Nepal
- "1-day workshop on excavation slopes: Guidelines and current practices" presenter, Institute of Engineering, TU Nepal – Durham UK, March 28, Kathmandu Nepal.
- "7-days Teachers Training/Workshop", Coordinator, CIMDU-Institute of Engineering, April 23-30, 2023
- "Technical seminar on Roadside Slope Instabilities: Root Causes and Mitigations" Keynote speaker, Nepal Engineers' Association, 03 July 2023, Kathmandu Nepal.
- Technical Talks on Geotechnical Engineering Challenges and Opportunities in Nepal, Organized by Geotechnical Student Organization, University of Maine, 18 October 2023 [Online].
- Erasmus+ Cluster Meeting and Contact-Making Seminar for Asia, the Pacific and the Middle East at Chulalongkorn University, Bangkok, Thailand, 13–14 November 2024

### GRANT AND AWARDS

- Capacity Building in Higher Education Erasmus+ Project entitled Sustainability and Quality Assurance for Academic Governance and Redesign Engineering Studies under agreement no. Project 101129192 — SQUARES.
- Collaborative research grant, University Grant Commission, Nepal, 2023
- Collaborative research grant, Durham University, UK, 2022
- Research contract, Quality Research and Development Center, Department of Roads, Nepal, 2022
- Mini-research grant, Research Directorate, Tribhuvan University, 2022.
- Nomination for Chinese Scholarship Council, Government of Nepal, 2015
- Merit based stipend in Institute of Engineering, Pulchowk Campus

### ACADEMIC/SCIENTIFIC CONTRIBUTION:

- **Reviewed** many manuscripts for different journals including Scientific reports, *Geotechnical and Geological Engineering*, *International Journal of Pavement Research and Technology*, *Natural Hazards Review*, *Marine Georesources & Geotechnology* etc. from different publisher i.e., Springer, ASCE and Taylor & Francis etc. ([ORCID ID: 0000-0003-2269-8246](https://orcid.org/0000-0003-2269-8246)).
- **Associated editor:** Nepal Journal of Civil Engineering.
- **Conference Convenor:** IOE Graduate Conference (Periodic conference)

### LANGUAGE:

English - Competent, Nepali – Native Speaker, Hindi – Basic, Chinese- Basic.

### REFERENCES:

1. Prof. Jun-Jie Zheng  
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