Kshitij Dahal

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Research Web: https://geokshitij.github.io/

SUMMARY

I work on **data-driven hydrology**, decision support systems in geosciences, and the innovative use of earth observation and machine learning for achieving sustainable development.

EDUCATION

PhD, Civil, Environmental and Sustainable Engineering — May 2026 (Expected)
Arizona State University, Arizona, USA

MS (en route to PhD), Civil, Environmental and Sustainable Engineering — Aug 2025
Arizona State University, Arizona, USA

BE, Civil Engineering — 2015 – 2019
Tribhuvan University, Nepal

ACADEMIC EMPLOYMENT

Graduate Research Associate — Dec 2022 – Present
Arizona State University, Arizona, USA

Graduate Teaching Assistant — Aug 2023 – May 2024
Arizona State University, Arizona, USA

Researcher (Natural Hazards Section) — Mar 2019 – Dec 2022
Himalayan Risk Research Institute, Bhaktapur, Nepal

Asst. Lecturer, Civil Engineering — Nov 2019 – Oct 2021
Khwopa College of Engineering, Tribhuvan University, Nepal

ACADEMIC HONORS AND AWARDS

Travel grant, CIROH Developers Conference, The University of Vermont, USA — 2025

Community Science Fellow, Thriving Earth Exchange, American Geophysical Union (https://thrivingearthexchange.org/project/lumberton-nc/)	2024 – 2026
Outstanding Reviewer Award, Earth's Future, American Geophysical Union	2025
Full Scholarship to the Snow Measurement Field School, CUAHSI, Mammoth Lakes, California (5 days residential school)	2025
HydroLearn Fellowship, Cooperative Institute for Research to Operations in Hydrology	2024
Outstanding Poster Award for "*A Framework to Improve Hydrological Forecasting with Deep Learning*"**,** ASU Flow 2024, Arizona State University, AZ, USA	2024
Travel grant, CIROH Developers Conference, The University of Alabama, USA	2024
Travel Grant, Remote Sensing of the Water Cycle Chapman, HI, USA	2024
Water Quality Tiny Grant (HaikuYourResearch), American Geophysical Union, AGU Fall Meeting 2023	2023
Recipient of the Graphical Abstract Competition Prize, American Geophysical Union	2023
Full Funding Award for Summer Graduate Writing Camp (June 12-16, 2023) at Arizona State University	2023
Hackathon Competition Winner (1st place), SpaceHack for Sustainability, Arizona State University	2023
Travel Grant, DRI Technical Conference 2022, India	2022
Coalition for Disaster Resilient Infrastructure (CDRI) fellow	2021
Hackathon Competition Winner (1st place), 3rd NOAA Workshop on Leveraging AI in Environmental Sciences, USA	2021
Travel Grant, 36th International Geological Congress, India (The event was canceled due to COVID-19)	2020

JOURNAL PUBLICATIONS

Bold text represent my name, and an asterisk * indicates the corresponding roles. (Citation count: 289+, H-index: 10)

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1. Bishui, C., … & **Dahal. K.** (Under Review). Developing a framework for assessment of the school's exposure to flood-depth scenarios. Natural Hazards.

2. **Dahal, K.**, Gupta, A., Bokati, L. & Kumar, S.* (Under Review). Improving Hydrological Forecasting with Bayesian Model Averaging Over Multiple Loss Functions. Applied Soft Computing.

3. **Dahal, K**.*, Talchabhadel, R., Pradhan, P., Parajuli, S., Shrestha, D., Chhetri, R., Gautam, A. P., Tamrakar, R., Gurung, S., & Kumar, S. (2025). Nepal's carbon stock and biodiversity are under threat from climate exacerbated forest fires. *Information Geography*. https://doi.org/10.1016/j.infgeo.2025.100003

4. Pradhan, P., Joshi, S., **Dahal, K.,** Hu, Y., Subedi, D. R., Putra, M. P. I. F., Vaidya, S., Pant, L. P., Dhakal, S., Hubacek, K., Rupakheti, M., Roberts, D., & van den Hurk, B. (2025). Policy Relevance of IPCC Reports for the SDGs and Beyond. *Resources, Environment and Sustainability (**Invited Editorial**)*. https://doi.org/10.1016/j.resenv.2025.100192

5. Pradhan, P., Subedi, D. R., **Dahal, K.,** Hu, Y., Gurung, P., Pokharel, S., Kafle, S., Khatri, B., Basyal, S., Gurung, M., & Joshi, A. (2024). Urban agriculture matters for sustainable development. *Cell Reports Sustainability*. https://doi.org/10.1016/j.crsus.2024.100217

6. **Dahal, K.*,** Sharma, S., Shakya, A., Talchabhadel, R., Adhikari, S., Pokharel, A., Sheng, Z., Pradhan, A. M. S., & Kumar, S. (2023). Identification of groundwater potential zones in data-scarce mountainous region using explainable machine learning. *Journal of Hydrology*. https://doi.org/10.1016/j.jhydrol.2023.130417

7. **Dahal, K.*,** & Gnyawali, K.R., (2023) Mapping landslide susceptibility and critical infrastructure for spatial decision-making, *Sustainable and Resilient Infrastructure*. https://www.tandfonline.com/doi/full/10.1080/23789689.2023.2181552

8. Talchabhadel, R., Maskey, S., Gouli, M. R., **Dahal, K.*,** Thapa, A., Sharma, S., Dixit, A. M., & Kumar, S. (2023). Multimodal multiscale characterization of cascading hazard on mountain terrain. *Geomatics, Natural Hazards and Risk*, 14(1), 2162443. https://doi.org/10.1080/19475705.2022.2162443

9. Gnyawali, K., **Dahal, K.,** Talchabhadel, R., & Nirandjan, S. (2023). Framework for rainfall-triggered landslide-prone critical infrastructure zonation. *Science of the Total Environment*, 872, 162242. https://doi.org/10.1016/j.scitotenv.2023.162242

10. Teck, V., Poortinga, A., Riano, C., **Dahal, K.,** Legaspi, R. M. B., Ann, V., & Chea, R. (2023). Land use and land cover change implications on agriculture and natural resource management of Koah Nheaek, Mondulkiri province,

Cambodia. *Remote Sensing Applications: Society and Environment*, 29, 100895. https://doi.org/10.1016/j.rsase.2022.100895

11. Bera, S., Gnyawali, K., **Dahal, K.,** Melo, R., Li-Juan, M., Guru, B., & Ramana, G. V. (2023). Assessment of shelter location-allocation for multi-hazard emergency evacuation. *International Journal of Disaster Risk Reduction*, 84, 103435. https://doi.org/10.1016/j.ijdrr.2022.103435

12. Pradhan, P., Callaghan, M., Hu, Y., **Dahal, K.,** Hunecke, C., Reusswig, F., Lotze-Campen, H., & Kropp, J. P. (2023). A systematic review highlights that there are multiple benefits of urban agriculture besides food. *Global Food Security*, 38, 100700. https://doi.org/10.1016/j.gfs.2023.100700

13. Pandey, H. P., Gnyawali, K., **Dahal, K.,** & Pokhrel, N. P. (2022). Vegetation loss and recovery analysis from the 2015 Gorkha earthquake (7.8 Mw) triggered landslides. *Land Use Policy*. https://www.sciencedirect.com/science/article/pii/S0264837722002125

14. Sharma, S., **Dahal, K.**, Nava, L., Gouli, M. R., Talchabhadel, R., Panthi, J., Roy, T., & Ghimire, G. R. (2022). Natural Hazards Perspectives on Integrated, Coordinated, Open, Networked (ICON) Science. *Earth and Space Science*, 9(1), e2021EA002114. https://doi.org/10.1029/2021EA002114 *[SPOTLIGHT 1] [SPOTLIGHT 2]*

15. Talchabhadel, R., Panthi, J., Sharma, S., Ghimire, G. R., Baniya, R., Dahal, P., Baniya, M. B., K. C., S., Jha, B., Kaini, S., **Dahal, K.,** Gnyawali, K. R., Parajuli, B., & Kumar, S. (2021). Insights on the Impacts of Hydroclimatic Extremes and Anthropogenic Activities on Sediment Yield of a River Basin. *Earth*, 2(1), 32–50. https://doi.org/10.3390/earth2010003

COURSES DEVELOPED

1. Cho, H., Ashraf, F., **Dahal, K.** (2024). Flood Inundation Mapping Using Machine Learning for Sustainable vs. Resilient Design. CIROH. (for senior undergraduate and/or graduate students) https://edx.hydrolearn.org/courses/course-v1:NMSU+CE483+Fall2024/about

TECHNICAL REPORTS

1. UNDRR (2022), Scoping Study On Compound, Cascading And Systemic Risks In The Asia Pacific, *United Nations Office for Disaster Risk Reduction* (UNDRR). https://www.undrr.org/quick/71248

CONFERENCE/POSTERS

1. **Dahal, K.**, Gupta, A., Kumar, S., & Bokati, L. (2024). A Framework to Improve Hydrological Forecasting with Deep Learning. *ASU Flow 2024.* October 21. Arizona State University, USA.

2. **Dahal, K.**, Gupta, A., Kumar, S., & Bokati, L. (2024). Operational Streamflow Forecasting Tool for Arizona Streams. *CMWR 2024*. October 02. University of Arizona, USA.

3. **Dahal, K.,** & Kumar, S. (2024). Mapping wetland potential in arid environments: A machine learning approach with geospatial interpretability. *AGU Chapman Conference on Remote Sensing of the Water Cycle*, February 13-16, Honolulu, USA.

4. **Dahal, K.,** Kumar, S., & Bokati, L. (2023). Advances in Hyperspectral Remote Sensing for Water Resources. *AGU23*. San Francisco, USA.

5. **Dahal, K.,** Kumar, S., & Talchabhadel, R. (2023), Explainable Artificial Intelligence to visualize the unseen. *EWRI Congress*, 2023, May 21 --25, Nevada, USA.
    a.
6. **Dahal, K.** (2022, October 12-13). Spatial decision making with landslide susceptibility and critical infrastructure. Presentation at the *DRI Technical Conference 2022*, Delhi, India.

7. **Dahal, K.,** Gnyawali, K. R., & Chapagain, S. (2021). National landslides database and susceptibility assessment of Nepal. *AGU Fall Meeting*, 2021. https://ui.adsabs.harvard.edu/abs/2021AGUFMNH35F..11D

8. **Dahal, K.,** Liu, G., Gnyawali, K. R., Talchabhadel, R., & Kumar, S. (2021). Framework for multi-hazards susceptibility assessment in Google Earth Engine. *AGU Fall Meeting*, 2021. https://ui.adsabs.harvard.edu/abs/2021AGUFMGC45I0916D

9. Talchabhadel, R., **Dahal, K.,** Kumar, S. (2021). Spatial downscaling of coarse resolution satellite-based precipitation estimates (SPEs) to 1 km using Machine Learning In *The 3rd NOAA Workshop on Leveraging AI in Environmental Sciences*, 13–17 September, USA.

10. Talchabhadel, R., **Dahal, K.,** Kumar, S. (2021). Machine Learning to Estimate Precipitation with Satellite-based and Gauged Observations In *The 3rd NOAA Workshop on Leveraging AI in Environmental Sciences*, 13–17 September, USA.

11. **Dahal, K.** & Gnyawali, K. R. (2020). Landslide Susceptibility Mapping in Nepal using Google Earth Engine In *Geo for Good 2020*, USA.

NEWS COLUMNS (OP-ED)

1. **Dahal, K.** & Thapa, B. R. (2025) World Water Day 2025 on Glacier Preservation: What It Means for Nepal? Republica. World Water Day 2025 on Glacier Preservation: What It Means for Nepal? - myRepublica

2. **Dahal, K.,** Talchabhadel, R., & Thapa, B. R. (2021). Landslide susceptibility and monsoon preparedness in Nepal: An engineering perspective. *Onlinekhabar*. Landslide susceptibility and monsoon preparedness in Nepal: An engineering perspective - OnlineKhabar English News

3. Thapa, B. R., Talchabhadel, R., **Dahal, K.,** & Pandey, V.P. (2021). मेलम्चीको बाढीबाट के सिक्ने ?. *Onlinekhabar*. https://www.onlinekhabar.com/2021/06/974746

PROFESSIONAL MEDIA CITATIONS

1. Tourism and biodiversity at risk as raging wildfires devastate forests in Nepal. (2025). **China Daily**. https://www.chinadaily.com.cn/a/202503/27/WS67e4bd4da3101d4e4dc2b29b.html

2. Open burning main cause of air pollution. (2025). **The Rising Nepal**. https://risingnepaldaily.com/news/58977

3. Wildfire Ravage Hundreds Of Acres Of Forest Land In Nepal | World News | WION (2025). **WION TV.** https://youtu.be/UFb_3MyJpew?si=4wbBrZYWRb3tuQkm [Television]

4. Ignored infernos. (2025). ***The Kathmandu Post (EDITORIAL)***. https://kathmandupost.com/editorial/2025/03/18/ignored-infernos

5. Wildfires put 500m tonnes of carbon— and tourism—at risk. (2025). ***Asia News Network***. https://asianews.network/nepals-wildfires-put-500m-tonnes-of-carbon-and-tourism-at-risk

6. Wildfire season has begun, but the worst is yet to come. (2025). ***The Himalayan Times***. https://thehimalayantimes.com/nepal/wildfire-season-has-begun-but-the-worst-is-yet-to-come

7. Wildfires put 500m tonnes of carbon— and tourism—at risk. (2025). ***The Kathmandu Post***. https://kathmandupost.com/money/2025/03/17/wildfires-put-500m-tonnes-of-ca

rbon-and-tourism-at-risk

8. Loss of Biodiversity Due to Wildfire (डढेलोबाट जैविक विविधता गुम्ने खतरा). (2025). ***Himal Khabar***. https://www.himalkhabar.com/news/144165

9. Study Report: Forests at Risk of Wildfire Due to Climate Crisis (अध्ययन रिपोर्ट : वन क्षेत्र जलवायु संकट कै कारण डढेलोको जोखिममा). (2025). *Jalbayu (Climate)*. https://www.jalbayu.com/news/2025-03-15-2271

10. Forest Wildfires in Nepal Threaten 500 Million Tons of Carbon and Biodiversity (नेपालमा वन डढेलोले ५०० मिलियन टन कार्बन र जैविक विविधतामा खतरा). (2025). *Artha Pranali (Economic System).* https://arthapranali.com/2025/03/11828

11. Forest Wildfires Pose a Threat to Carbon and Biodiversity (वन डढेलोले कार्बन र जैविक विविधतामा खतरा). (2025). *Everestpedia*. https://www.everestpedia.com/detail/3646

12. 'Forest Wildfires Threaten Biodiversity' ('वन डढेलोले जैविक विविधतामा खतरा'). (2025). *Green Economy*. https://greeconomy.com/fire-impact-on-biodiversity

13. Forest Wildfires in Nepal Threaten 500 Million Tons of Carbon and Biodiversity (नेपालमा वन डढेलोले ५०० मिलियन टन कार्बन र जैविक विविधतामा खतरा). (2025). *KendraBindu (Central Point).* https://kendrabindu.com/social-affairs/404665

14. Forest Fires in Nepal Threaten 500 Million Tons of Carbon and Biodiversity (नेपालमा वन डढेलोले ५० करोड टन कार्बन र जैविक विविधतामा खतरा). (2025). *Jal Sarokar (Water Concern).* https://jalasarokar.com/news/forest-fires-in-nepal-threaten-500-million-tons-of-carbon-and-biodiversity-2260

15. Forest Wildfires in Nepal Threaten 500 Million Tons of Carbon and Biodiversity (नेपालमा वन डढेलोले ५ सय मिलियन टन कार्बन र जैविक विविधतामा खतरा). (2025). *Kavre Khabar (Kavre News).* https://www.kavrekhabar.com/main-news/2025/03/16/3717

16. Wildfires in Nepal pose threat to 500 million tons of carbon and biodiversity (नेपालमा वन डढेलोले ५०० मिलियन टन कार्बन र जैविक विविधतामा खतरा). (2025). Arthik Digital News https://www.eaarthik.com/2025/03/117227/

17. Back to the land in the cities. By ***Nepali Times***. (2024) https://nepalitimes.com/here-now/back-to-the-land-in-the-cities

18. Landslide susceptibility and monsoon preparedness in Nepal: An engineering perspective
19. By ***PreventionWeb, UNDRR***. (2021) https://www.preventionweb.net/news/landslide-susceptibility-and-monsoon-preparedness-nepal-engineering-perspective

INVITED TALKS/SEMINARS

1. **Dahal, K.** (2024, March 13). Explainable Machine Learning in Groundwater Potential Mapping Webinar at *UNESCO GWYN*. https://rb.gy/ue0vik

2. **Dahal, K.** (2023, September 19). Discussion Facilitator at Session 1 --Development of core use cases in environmental sciences. *5th NOAA Workshop on Leveraging AI in Environmental Sciences*. https://noaaai2023.sched.com/event/1Q6Qa/session-1-development-of-core-use-cases-in-environmental-sciences

3. Talchabhadel, R., & **Dahal, K.** (2023, May 22). Remote Sensing, Big Data Analytics, and Cloud Computing: Application to Water Quality Modeling. Workshop conducted at the meeting of the *Environmental & Water Resources Institute (EWRI) Congress 2023*, American Society of Civil Engineers (ASCE), Henderson, NV.

4. **Dahal, K.** (2022, June 21). Landslide susceptibility and monsoon preparedness in Nepal: An engineering perspective. What Happened in Melamchi? Lecture presented at *Khwopa College of Engineering, Tribhuvan University*, Nepal. https://fb.watch/kO9H0OeO2T/

5. **Dahal, K.** (2022, April 7). Introduction to Google Earth Engine for cloud computing. Discussion session conducted for *S4W Nepal*.

6. **Dahal, K.** (2022, April 6). Google Earth Engine and cloud computing. Lecture presented at *Central Department of Geography, Tribhuvan University*, Nepal.

7. **Dahal, K.** (Moderator). (2021, August 28). Chocolate Talk on DRR #3: Artificial intelligence (AI) for disaster risk reduction. Discussion conducted for *U-INSPIRE Alliance*. https://www.youtube.com/watch?v=mHLaFQw-C7A

8. **Dahal, K.** (2021, July 30). DRR talk #1: The future of disaster risk governance in 2045. Talk presented at the *Disaster Risk Reduction and Tsunami Information, UNESCO Office*, Jakarta. https://fb.watch/kO9y3nBapv/

TEACHING ASSISTANTSHIPS (GTA/UGTA)

Num. Methods for Engrs (CEE 384), Arizona State University	Spring 2024
Fluid Mechanics for Civil Engrs (CEE 341), Arizona State University	Fall 2023
Engineering Hydrology (CE 606), Tribhuvan University, Nepal	Spring 2019

Engineering Surveying (CE 504), Tribhuvan University, Nepal	Spring 2019
GIS and Remote Sensing (CE 78501), Tribhuvan University, Nepal	Fall 2020
Engineering Hydrology (CE 606), Tribhuvan University, Nepal	Spring 2021

LEADERSHIP AND SERVICES

Executive Committee (Elected), Young Earth System Scientists (YESS) Community	July 2025 – June 2026
Community Science Fellow, American Geophysical Union	May 2024 – Present
Regional Representative (South East Asia), Young Earth System Scientists (YESS) Community	Jan 2021 – Jan 2022
Coordinator, Capacity Building, U-Inspire Alliance	May 2019 – Present

ACADEMIC SERVICES AND MEMBERSHIPS

Editorial Advisory Board

Regional Environmental Change, Springer Nature	2024 – Present

Reviewer (50+ articles reviewed)

Earth's Future	2024 – Present
International Journal of Disaster Risk Reduction, Elsevier	2023 – Present
Humanities and Social Sciences Communications, Nature	2023 – Present
Regional Environmental Change, Springer Nature	2021 – Present
Anthropocene Science, Springer Nature	2021 – Present
PLOS Sustainability and Transformation	2021 – Present
The Geographic Base, Nepal Journals Online	2020 – Present

Memberships

Member, American Society of Civil Engineers, USA	2022 – Present
Member, American Geophysical Union, USA	2020 – Present

Registered A class Civil Engineer, Nepal Engineering Council, Nepal 2020 – Present