KSHITIJ DAHAL

Postdoctoral Researcher @ University of Kansas
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Google Scholar: https://scholar.google.com/citations?user=jOtnPBIAAAAJ&hl=en&oi=ao

EDUCATION

2026 **PhD**, Civil, Environmental and Sustainable Engineering, Arizona State University, USA
2025 **MS,** Civil, Environmental and Sustainable Engineering**,** Arizona State University, USA
2020 **BEng,** Civil Engineering**,** Tribhuvan University, Nepal

ACADEMIC & PROFESSIONAL APPOINTMENTS

Postdoctoral Researcher, University of Kansas, Kansas, USA (05.2026 – Present)
Graduate Research Associate, Arizona State University, Arizona, USA (12.2022 – 05.2026)
Graduate Teaching Assistant, Arizona State University, Arizona, USA (08.2023 – 05.2024)
Researcher, Himalayan Risk Research Institute, Bhaktapur, Nepal (03.2019 – 12.2022)
Lecturer, Khwopa College of Engineering, Tribhuvan University, Nepal (11.2019 – 10.2021)

RESEARCH & PUBLICATIONS

Peer-reviewed Journal Publications

*Publication count = 16, Citation count = 465(Google Scholar), * denotes corresponding role.*

2026 **Dahal, K.,** Gupta, A., Bokati, L. & Kumar, S. (2026). Ensemble Streamflow Forecasting With Diverse Loss Functions. Applied Soft Computing. https://doi.org/10.1016/j.asoc.2026.115276

2026 Ghosh, P., Bera, S., **Dahal, K.**, Melo, R., Tamang, S., Priyadarshi, S., & Talukdar, S. (2026). Extreme event-induced landslides and flooding in Darjeeling, 4–5 October 2025. Landslides. https://doi.org/10.1007/s10346-026-02743-8

2026 Bishui, C., Bera, S., Priyadarshi, S., Ghosh, P. & **Dahal. K.** (2026). Developing a framework for assessment of the school's exposure to flood-depth scenarios. Natural Hazards. https://link.springer.com/article/10.1007/s11069-025-07852-6

2026 Silwal, A., Subedi, A., Tamrakar, R., **Dahal, K.**, Dahal, D., Ekpetere, K. O., & Zhran, M. (2026). A Comprehensive Review of Machine Learning and Deep Learning Methods for Flood Inundation Mapping. Earth, 7(2), 44. https://doi.org/10.3390/earth7020044

2025 **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

2025 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

2024 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

2023 **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

2023 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

2023 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

2023 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

2023 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

2023 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

2022 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

2022 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**: ICON Principles Underused as a Natural Hazards Research Tool - Eos.

2021 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

Manuscripts Submitted for Peer-review

2026 Khadka, N., Liu, W., **Dahal, K.**, Yang, Z., Huang, Y., & Gouli, M. R. (2026). Data-driven machine learning method for assessing glacial lake outburst flood (GLOF) susceptibility and controlling factors in China–Nepal transportation corridors (Under Review). Geomorphology.

Conference/Posters Selected

2025 **Dahal, K.,** Kumar, S., & Bokati, L. (2025). Beyond Lumped Inputs: Transformer Models and Spatially-Explicit Data Integration for Streamflow Forecasting in Arizona. Dec 17. AGU25. New Orleans, USA

2025 Cho, H., Ashraf, F., **Dahal, K.**, May 28, 2025. HydroLearn Module: CIROH CE483 - Flood Inundation Mapping Using Machine Learning for Sustainable vs. Resilient Design. 2025 CIROH Developers Conference, Burlington, VT.

2024 **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.

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

2024 **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.

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

2023 **Dahal, K.**, Kumar, S., & Talchabhadel, R. (2023), Explainable Artificial Intelligence to visualize the unseen. EWRI Congress, 2023, May 21 --25, Nevada, USA.

2023 **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

2021 **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

2021 **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

2021 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.

2021 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.

Technical Reports

2022 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

News Columns Op-Ed

2025 **Dahal, K.** & Thapa, B. R. (2025) World Water Day 2025 on Glacier Preservation: What It Means for Nepal? Republica. https://myrepublica.nagariknetwork.com/index.php/news/world-water-day-2025-on-glacier-preservation-what-it-means-for-nepal-87-57.html

2021 **Dahal, K.**, Talchabhadel, R., & Thapa, B. R. (2021). Landslide susceptibility and monsoon preparedness in Nepal: An engineering perspective. Onlinekhabar. https://english.onlinekhabar.com/landslide-susceptibility-and-monsoon-preparedness-in-nepal-an-engineering-perspective.html

Media Coverage Selected

2026 GeoAI-based study charts flood exposure of schools in state. **The Times of India**. https://timesofindia.indiatimes.com/city/patna/geoai-based-study-charts-flood-exposure-of-schools-in-state/amp_articleshow/128004523.cms

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

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

2025 Wildfire Ravage Hundreds Of Acres Of Forest Land In Nepal. WION TV. https://youtu.be/UFb_3MyJpew?si=4wbBrZYWRb3tuQkm

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

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

2022 ICON Principles Underused as a Natural Hazards Research Tool. By Eos. https://doi.org/10.1029/2022EO220113

Invited Talks/Seminars

2025 **Dahal, K.** (2025, Oct 17). Modeling and Data Integration Strategies for Data-driven Streamflow Forecasting. Arizona State University.

2024 **Dahal, K.** (2024, March 13). Explainable Machine Learning in Groundwater Potential Mapping Webinar at UNESCO GWYN.

2023 **Dahal, K.** (2023). Mixed methods for Systematic Literature Reviews. Jackson State University (JSU Water Lab).

2023 **Dahal, K.** (2023). Planetary-scale data analyses and machine learning with Google Earth Engine. Jackson State University (JSU Water Lab).

2023 **Dahal, K.** (2023, September 19). Discussion Facilitator at the 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

2023 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.

2022 **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.

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

2021 **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

2021 **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/

GRANTS, FELLOWSHIPS & AWARDS

External Grants/Proposals

2025 **[Awarded]** Extended: A web-based dynamic streamflow forecasting tool for Arizona Streams, awarded by AWII, $100,000. **Role**: Proposal co-author; funded project team member (PI: Prof. Saurav Kumar)

2024 **[Awarded]** A web-based dynamic streamflow forecasting tool for Arizona Streams, awarded by "Arizona Water Innovation Initiative (AWII)" sponsored by the Arizona Office of the Governor, Arizona State University $100,000. **Role**: Proposal co-author; funded project team member (PI: Prof. Saurav Kumar)

2022 **[Awarded]** National scale landslide database and landslide susceptibility map of Nepal, funded by Coalition for Disaster Resilient Infrastructure (CDRI), Himalayan Risk Research Institute, $10,000. **Role**: CO-I with Kaushal Gnyawali

2026 **[Pending]** NASA ROSES A.9 Proposal Specification Prithvi-Enabled Operational Streamflow DSS for SRP. ~$400,000. **Role**: Assisted PIs in drafting proposal (PIs: Prof. Saurav Kumar, Prof. Enrique R. Vivoni, Dr. Bohumil M. Svoma)

Fellowships

2024 Community Science fellow, Thriving Earth Exchange, American Geophysical Union, (Project Details: https://thrivingearthexchange.org/project/lumberton-nc/)

2024 HydroLearn fellow, Cooperative Institute for Research to Operations in Hydrology at NOAA and The University of Alabama

2021 Coalition for Disaster Resilient Infrastructure (CDRI) fellow

Awards

2026 Honorary Mention, 16th Annual SSEBE Graduate Poster Symposium, Arizona State University

2025 **Outstanding Reviewer Award**, Earth's Future, American Geophysical Union

2024 **Outstanding Poster Award** on "A Framework to Improve Hydrological Forecasting with Deep Learning", ASU Flow, Arizona State University, AZ, USA

2023 Water Quality Tiny Grant, AGU Fall Meeting

2023 Best Graphical Abstract Competition Prize, American Geophysical Union

2023 **Hackathon Winner** (1st place), SpaceHack for Sustainability, Arizona State University

2021 **Hackathon Competition Winner** (1st place), 3rd NOAA Workshop on Leveraging AI in Environmental Sciences, USA

Travel grants

2025 CIROH Developers Conference, The University of Vermont, USA

2024 CIROH Developers Conference, The University of Alabama, USA

2024 Remote Sensing of the Water Cycle Chapman, HI, USA

2022 DRI Technical Conference 2022, India

2020 Travel Grant, 36th IGC, India (The event was canceled due to COVID-19

Scholarships

2025 Full Scholarship to the Snow Measurement Field School, CUAHSI, Mammoth Lakes, California (5 days residential field training)

2023 University Graduate Fellowship x 3 ($3130), Arizona State University

2023 Summer Graduate Writing Camp at Arizona State University

2011 Mahatma Gandhi Scholarship (100% scholarship for intermediate level study)

2011 Higher Secondary Education Board Scholarship, Government of Nepal

TEACHING EXPERIENCE

Graduate Teaching Assistant, Arizona State University

2024 Numerical Methods for Engineers, Instructor: Prof. Saurav Kumar
2023 Fluid Mechanics for Civil Engineers, Instructor: Prof. Tianfang Xu

Instructor of Record, Tribhuvan University, Nepal

2021 Engineering Hydrology
2020 GIS and Remote Sensing
2019 Engineering Hydrology
2019 Engineering Surveying

Invited Teaching

2024 Introduction to Google Earth Engine, Remote Sensing for Water Resources and Civil Engineering, Arizona State University; delivered 4 contact hours.
2023 Introduction to Machine Learning with PyTorch, Numerical Methods for Engineers, Arizona State University; delivered 2 contact hours.
2022 Google Earth Engine and cloud computing. Central Department of Geography, Tribhuvan University; delivered 4 contact hours.

Curriculum Development & Teaching Materials

2024 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
2025 **Dahal, K.** (2025). Environmental Data Analysis. Online course materials and interactive notebooks https://geokshitij.github.io/Stats/
2024 **Dahal, K.** (2024). py4all: The Bare Minimum Python Guide. Open-source introductory Python guide for engineering students https://github.com/geokshitij/py4all
2024 **Dahal, K.** (2024). Arizona's Water Systems. Interactive educational story and teaching resource. https://geokshitij.github.io/azwaters/

ACADEMIC SERVICES AND ADVISING

Editorial Advisory Board

Regional Environmental Change, Springer Nature, 2024 – Present

Peer Reviewer (60+ manuscripts reviewed)

npj Natural Hazards, 2026 – Present
Reliability Engineering & System Safety, 2025 – Present
Earth Systems and Environment, Springer, 2025 – Present
Journal of Geophysical Research - Biogeosciences, 2025 – Present
Earth's Future, 2024 – Present
Hydrological Sciences Journal, 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

Mentoring & Advising

Co-advisor, Vanna Teck (MS), National University of Battambang (2019 – 2021)

Leaderships

Executive Committee, Young Earth System Scientists (YESS) Community, 7.2025 – 6.2026
Community Science Fellow, American Geophysical Union, 5.2024 – 11.2026
Regional Representative (South East Asia, Elected), YESS Community, 1.2021 – 1.2022
Coordinator, Capacity Building, U-INSPIRE Alliance, 12.2019 – 12.2022

Memberships/Licenses

Member, American Association for the Advancement of Science, USA, 2026 – Present
Member, American Society of Civil Engineers, USA, 2022 – Present
Member, American Geophysical Union, USA, 2021 – Present
'A' class Civil Engineer License, Nepal Engineering Council, Nepal, 2020

TECHNICAL SKILLS

Civil/Hydrology: HEC-RAS, HEC-HMS, MODFLOW, AutoCAD Civil 3D, r.avaflow
Remote Sensing & Geospatial: Google Earth Engine, GDAL, Rasterio, GeoPandas, ArcGIS Pro, QGIS, GRASS GIS, PostGIS, multispectral/hyperspectral/SAR processing
Machine Learning & AI: Python, R, C/C++, Scikit-learn, TensorFlow, PyTorch, CNNs, U-Net, Transformers, explainable AI (SHAP), time-series modeling, uncertainty, Vensim
Cloud & Data Engineering: AWS, Google Cloud Platform, HPC, Docker, Git, scalable geospatial pipelines with Zarr, GeoTIFF, NetCDF, HDF5