NISCHAL KAFLE

Water Resources Engineer

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OBJECTIVE

Civil engineer specializing in hydrology and water policy, with expertise in statistical modeling, simulation, and experimental research. Focused on advancing hydrological modeling, climate impact assessment, and water resource management to support flood resilience and sustainable water infrastructure.

RESEARCH INTEREST

Stochastic Hydrology, Hydroclimatic Extremes and Physical Processes, Hydrological & Numerical Modeling, Machine Learning, Infrastructure Resilience, and Flood Risk Mitigation

EXPERIENCES

Aug 2021–Present **Graduate Assistant & Teaching Assistant**, *University of Memphis*.
- Proposed four novel research ideas on hydroclimatic extremes, hydrological modeling, and the use of ML/DL to hydrologic predictions (3 manuscripts under review; 2 additional in preparation).
- Assisted in teaching undergraduate courses and labs; graded assignments and exams, and supported students with course material
- Contributed to the preparation of two research grant proposals: one funded by TDEC ($300k$, PI: Prof. Claudio Meier) and one submitted to NASA NSPIRES

Aug 2019–Aug 2021 **Water Resources Engineer**, *Ministry of Physical Infrastructure Development*, Province 5, Nepal.
- Reviewed feasibility reports for $30+$ irrigation and disaster mitigation projects, improving design efficiency and optimizing project costs.
- Collaborated with Asian Development Bank and World Bank to draft procurement guidelines for seven irrigation projects.
- Conducted groundwater research to support state-level water resources planning.

Aug 2015–Jul 2019 **Engineer/Head of Technical Branch**, *Ministry of Irrigation*, Kathmandu, Nepal.
- Managed technical operations for $150+$ irrigation and disaster mitigation projects by working closely with local farmers and convincing them for active participation and contributions.
- Conducted environmental impact assessments and hazard mapping to support sustainable irrigation development.
- Provided training to local farmers and $20+$ user committees, enhancing their knowledge and skills.

Dec 2014–Jul 2015 **GIS Expert and Project Manager**, *Bright Future International Pvt. Ltd.*, Kathmandu, Nepal.
- Prepared transportation master plan for 5 rural municipalities in hilly region of Nepal.
- Integrated feedback from the local ward committee in municipal planning processes.

EDUCATION

Aug 2021–May 2026 **PhD, Civil Engineering**, *The University of Memphis*, Memphis, TN, U.S.A..
Dissertation: Effects of spatial and temporal resolution of the rain gauge network on regional depth-duration-frequency (DDF) values of extreme rainfall over short durations

Aug 2021–Dec 2024 **MS Civil Engineering (Water Resources)**, *The University of Memphis*, Memphis, TN, U.S.A., GPA-3.95.

Dec 2010–Dec 2014 **BS Civil Engineering**, *Tribhuvan University, IOE Central Campus*, Pulchowk, Lalitpur, Nepal, Equivalent GPA-3.92.

SKILLS

Software GIS (ArcGIS Pro, QGIS), SWMM, PCSWMM, AutoCAD, Civil 3D, HEC-RAS, HEC-HMS, OpenFOAM

Programming	Python (Pytorch, Numpy, JAX, PyMc, NumPyro), C/C++, R, Matlab, Bash scripting, Machine Learning
Research Tools	High-performance computing (HPC; BigBlue, TAAC), Unix/Linux, Google Earth Engine, Git/Github

ACHIEVEMENTS

July 2025	**Open-source developer** of nsEVDx, a Python library for hydroclimatic extremes
March 2025	**World-Class Achiever,** Division of International Affairs, University of Memphis
March 2025	**Dissertation Completion Research Grant ($5000),** Graduate School, University of Memphis
2022/2023/2024	**Conference travel grants** by Graduate Student Association, University of Memphis
2021-Present	**Graduate Assistantship,** Department of Civil Engineering, University of Memphis
2010-2014	**Merit-Based Scholarship** to pursue bachelors in Civil Engineering, Tribhuvan University

LEADERSHIP

Sep 2025 Treasurer, Tau Beta Pi The University of Memphis Chapter

Oct 2023–Oct2024 President, Nepalese Student Association at the University of Memphis (NSAUM)
- Organized five cultural events and a Level 1 event with over 350 participants

2024–Present Executive Member, NSF NHERI Graduate Student Council
- Participated in meetings, online seminars and presented at the conference organized by NHERI

2022–2023 General Assembly Representative, Graduate Student Association (GSA)
- Facilitated GSA services to the Departments of Herff College of Engineering, UofM
- Reviewed travel grant applications of 10 applicants

2021–2022 Executive Member, NSAUM
- Organized five cultural events and a Level 1 event

PUBLICATIONS & PRESENTATIONS

Google Scholar Link

Kafle, N., & Meier, C. I. (2025). A Simple Method for Enhancing the Spatial Independence of Regional Partial Duration Series in Extreme, Short-Duration Rainfall Frequency Analyses. Authorea Preprints. `https://doi.org/10.22541/essoar.176281288.81066358/v1` [Under Review at Stochastic Environmental Research and Risk Assessment].

Kafle, N., DellAira, F., Chadwick, C., & Meier, C. I. (2025). Does the choice of minimum interevent time affect regionally derived DDF values for short durations when using partial duration? [Under Review at Journal of Hydrologic Engineering].

Kafle, N., & Meier, C. I. (2025). nsEVDx: A Python library for modeling Non-Stationary Extreme Value Distributions. arXiv preprint arXiv:2509.07261 [Manuscript submitted to pyOpenSci]. `https://doi.org/10.5281/zenodo.15850043`

Kafle, N. (2025). Uncertainties and Trends in Short-Duration Extreme Precipitation: Implications for Urban Pluvial Flooding. *Invited Presentation* at the AMSNWA Memphis Chapter, November 18, 2025, Agricenter International, Memphis, TN

Meier, C.I., Dell'Aira, F., **Kafle, N.**, and Burnette, D.J. (2024). Updating Equations for Peak Flow Estimation in Urban Creeks and Streams of Tennessee (Part 1). *Research final report* from the University of Memphis, sponsored by the Tennessee Department of Transportation Long Range Planning Research Office & Federal Highway Administration

MEMBERSHIPS

2026–Present	AGU Precipitation Technical Committee
2024–Present	Tau Beta Pi – The Engineering Honor Society
2022–Present	American Society of Civil Engineering
2022–Present	American Geophysical Union
2015–Present	Nepal Engineering Council

REFERENCES

Dr. Claudio Meier, Advisor, The University of Memphis, `cimeier@memphis.edu`, +1 901 2978855
Dr. Dorian Burnette, PhD Committee, The University of Memphis, `djbrntte@memphis.edu`, +1 901 6784452
Dr. Daniel Wright, PhD Committee, University of Wisconsin-Madison, `danielb.wright@wisc.edu`, +1 608 2621978