

ASPHOTA WASTI

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PROFESSIONAL EXPERIENCE

Graduate Research Assistant at University of Cincinnati 2017-Present

Climate Change Risk Assessment of the Upper Arun Project in Nepal

The World Bank Group, University of Cincinnati, CSPDR

Assessed the climate risks (changes in mean, extremes, and effect on daily operation) to a proposed hydropower project using the International Hydropower Association Climate Resilience Guide.

Visualization of Uncertainty of Forecast Component Parts

National Weather Service- NOAA and University of Cincinnati

Proposed techniques to improve real-time flood forecast by partitioning the uncertainties using Analysis of Variance Technique and visualizing the results using heatmaps and bar charts.

Research Trainee at the National Water Centre 2021

In collaboration developed a framework to assess the topographic sensitivity of a coastal flooding model for sites from the east coasts of the United States using models that solves shallow water equations.

Short Term Consultant to the World Bank 2019

Independent Consulting Job collecting suspended sediment samples from hydropower projects in Nepal and India

EDUCATION

PhD Environmental Engineering, University of Cincinnati 2022 May

MS Environmental Engineering, University of Cincinnati 2019

BE Civil Engineering, Tribhuvan University, Nepal 2015

Keywords: GIS, Probability, Bayesian Statistics, Time Series, Hydrologic Modelling, Optimization, Systems Analysis, Spatial Temporal Data Mining, Hydrology, Hydropower, Economics

SKILLSET

Downloading and processing global gridded datasets and **climate projection- NetCDF files** (R, Python), Data cleaning, statistical analysis, **stochastic weather generation**, MCMC (Supercomputer, R, Python), **Geospatial analysis**, watershed delineation, **map generation**, and visualization (GIS), **Hydrologic modeling**, hydraulic modeling, and reservoir routing (MATLAB, Python, HEC products), **Storm surge modeling** (GeoCLAW)

Professional Fluency in **English**, Nepali | Conversational in **French** (DELF A2 Certified)

PUBLICATIONS

- Behzadi F, Wasti A, Rahat SH, Tracy JN, Ray PA (2020) Analysis of the climate change signal in Mexico City given disagreeing data sources and scattered projections 27:100662. doi: 0.1016/j.ejrh.2019.100662
- Zhu, Z., Wasti, A., Schade, T., & Ray, P. A. (2021). Techniques to Evaluate the Modifier Process of National Weather Service Flood Forecasts. Journal of Hydrology X
- Wasti, A., Ubierna, M., Wi, S., Karki, P., Folch, C., & Ray, P. A. (2022). Climate Change and the Hydropower Sector: A Review. Wiley Interdisciplinary Reviews: Climate Change (In Publication)
- Rahat, S., Steinschneider S., Kucharski, J., Arnold, W., Olzewski, J., Walker, W., Maendly, R., Wasti, A., & Ray, P. A. (2022). Characterizing Hydrologic Vulnerability under Non-Stationary Climate and Antecedent Conditions using a Process-Informed Stochastic Weather Generator. Journal of Water Resources Planning and Management. Journal of Water Resources Planning and Management (In Publication)
- Behzadi, B., Steissberg, T., Ray, P. (2022). Vulnerability assessment of drinking water supply under climate uncertainty using a river contamination risk (RANK) model. Environmental Modeling and Software (In Publication)