Garima Acharya

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Areas of Interest

Water Resources Engineering, Environmental Engineering, Climate Change, Energy

Education

Pulchowk Campus, Institute of Engineering (IOE), Tribhuvan University 2020 to 2024
Bachelor's in Civil Engineering *Rank 1: Seventh Semester / Female Topper*

Kathmandu Model College 2017 to 2019
+2 in Science *GPA: 3.71*

Experience

Consultant | Oxfam Nepal March 2025 – Present

- Co-authoring a book on **WASH System Strengthening** in Nepal, aligned with the nine building blocks of WASH.
- Developing an **implementation guide** for local governments and an **audit framework** for regulatory bodies.
- Collaborating with key water sector organizations in Nepal, including **MoWS, UNICEF, Helvetas, IRC**, and others.

Founder | Paani AI November 2024 – Present

- Initiated a **deep tech venture** focused on addressing **data gaps** for sustainable water management in Nepal. Engaged with **stakeholders**, including professors, water entrepreneurs, and utility providers, to identify **pain points** and refine solutions.

Research Intern | CWRS May 2024 – July 2024

- Created a **gridded climate data product for Nepal (2013–2023)** at 1 10 km resolution to support sustainable water management.
- Employed Standard Normal Homogeneity Test **(SNHT)** with bootstrapping for data quality analysis. Applied **IDW** for temporal and **co-kriging** for spatial interpolation methods. Used **CLIMPACT** for temperature extremes analysis to aid climate adaptation planning.

Research Assistant | Paudel Lab October 2021 – June 2024

- Worked under Assoc. Prof. Shukra Raj Paudel on **environment and climate resilience research** for three years.
- Facilitated collaborative studies with international partners, including **Eawag, Duke University, NREL, Coventry University, and La Trobe University**, advancing interdisciplinary research.

Chief Operational Officer | MeasureMe.AI August 2021 – January 2023

- Co-founded a social enterprise using **3D reconstruction** for automated child malnutrition assessment, improving health outcomes in underserved areas.
- Represented the company globally at the **Hult Prize Accelerator 2022**, ranking among the **top 16 social startups worldwide**.

Publications

Published

1. Shrestha, A.*, Bhattarai, N.*, **Acharya,G.***, Timalsina, H.*, Marks, S. J., Uprety, S., & Paudel, S. R. (2023). Water, sanitation, and hygiene of Nepal: status, challenges, and opportunities. **ACS ES&T Water**, 3(6), 1429-1453. (Equal contribution as first author) **Best Paper 2023 Award**. DOI: https://doi.org/10.1021/acsestwater.2c00303

2. **Acharya, G.**, Shrestha, S., Poudel, S., & Paudel, S.R. (2024). Climate change challenges to meeting the sustainable development goals in the Hindu Kush Himalayan region. **International Journal of Environmental Studies**. DOI: https://doi.org/10.1080/00207233.2024.2322883

3. Baniya, S., Angove, M.J., Wagle, A., **Acharya, G.**, Khatri, M., Mainali, B., Ngo, H.H., Guo, W., & Paudel, S.R. (2024). A review of the implications of hydroxyl radical and hydrogen peroxide as earthquake chemical precursors. **Journal of Hydrology**. DOI: https://doi.org/10.1016/j.jhydrol.2024.131917

4. **Acharya, G.**, Paudel, P., Arent, D.J., Gaura, E., & Paudel, S.R. (2025). Roadmap to reach global net-zero emissions for developing regions by 2085. **Cell Reports Sustainability**.

Under review

1. Shrestha, S., **Acharya, G.**, & Paudel, S.R. (2025). The role of machine learning in biohydrogen economy. Book Chapter, **Elsevier** (Equal contribution as the first author).
2. Lamichhane, K.*, **Acharya, G.***, Pokharel, P.*, Ojha, R.*, KC, K., Timilsina, P., Vickers, I., & Britton, B. Building Resilient Water Systems with AI-enhanced WASH Data. **IWA**. (Equal contribution as first author)

Awards

- **Knight-Hennessy Scholars Finalist, Stanford University (2024)**: Selected among the **top 180** out of **10,000+** global applicants (<2% acceptance rate) for Stanford graduate studies; participated in the immersive finalist weekend at Stanford.
- **Best Student of Campus Award**: Honored as the Student of the Year-2080, among **2,000** students and 8 engineering departments of Pulchowk Campus for achievements in academic pursuits, research, and innovation.
- **Hult Prize Global Accelerator 2022, Boston, US**: Led my team to victory at the Kathmandu Regionals Summit, outshining over **30,000 teams** globally to secure a spot among the **top 16 teams worldwide**.
- **Female Topper in Civil Engineering**: Honored as the top female civil engineering student in Pulchowk Campus and second in Nepal for academic excellence.
- **Best in Department**: Recognized as the semester topper among **200** civil engineering students at Pulchowk Campus for the seventh semester.
- **International Civil Engineering Symposium, 2022**: Bagged 7 out of 8 gold medals in competitions, including in concrete design, model design, and others in NIRMAAN ICESS, Bangalore, India.
- **Merit-based Scholarship for Bachelor's Degree**: Recipient of a fully-funded, merit-based scholarship from the Government of Nepal for pursuing a Bachelor's degree in Civil Engineering.

Projects

Hydrological and Climate Modeling | *SPHY, R, Python, AquaCrop*

- Assessed the contribution of glacier and snow melt in total streamflow in the Gandaki Basin.
- Projected the future climate using the Shared Socio-economic Pathways (SSPs)
- Evaluated the impact of climate change on streamflow and contribution of glacier and snow melt
- Evaluated the implications of the melt in offsetting drought impacts on agriculture and the environment.

Earthquake Early Warning System | *Python, MLP*

- Collaboration with the **Civil and Environmental Engineering of the Duke University** to establish an earthquake early warning system in the Kathmandu Valley
- Employed **Multilayer Perceptron** algorithm to predict the earthquake's S-wave parameters during early warning.
- Presented a poster at the Geo-Hazard Symposium, held in Kathmandu, Nepal

Relevant Coursework

Structural Analysis and Design, Hydrology, Fluid Mechanics and Hydraulics, Transportation Planning and Engineering, Sanitary and Environmental Engineering, Solid Waste Management, Technology, Environment and Society, Engineering Mathematics I–III, Numerical Methods