

# Saugat Aryal, E.I.T

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## SUMMARY

Ph.D. candidate in Civil Engineering specializing in hydrologic and hydrodynamic modeling, flood-risk assessment, and water-resources analysis. Experienced in river and floodplain modeling, geospatial analysis, and hydrologic extremes. EIT seeking water resources engineering opportunities focused on flooding, drainage, and resilience.

## EDUCATION

**Michigan State University (MSU), Civil Engineering**

*Ph.D. in Civil Engineering (\*GPA: 3.89)*

East Lansing, MI

Aug 2023 – Present

**Tribhuvan University (IOE, Pulchowk Campus)**

*BE in Civil Engineering (GPA: 3.9)*

Kathmandu, Nepal

Nov 2017 – July 2022

## SOFTWARE PROFICIENCY

HEC-HMS, HEC-RAS, SRH-2D, SMS, CaMa-Flood, ArcGIS, QGIS, Python, R, Civil3D, AutoCAD, MS Office

## WORK EXPERIENCE

**Graduate Research Assistant (Multi-scale FEW Lab) – MSU**

Aug 2023 – present

- Developed and executed multi-decadal (1979-2018) hydrologic assessments across Asian basins to evaluate flood risks
- Spearheaded multi-model ensemble analysis to project regional hydrologic shift and concurrent flood-drought extremes
- Collaborated with a 4-member team to validate NASA SWOT satellite data on the Ganges River for operational use
- Led review of climate-hydropower dynamics in Asian basins, identifying infrastructure risks and policy gaps

**Civil Engineer – PS Nirman Sewa**

Jan 2023 – Aug 2023

- Supervised and coordinated QA/QC inspections of 12+ road and bridge projects, ensuring compliance with DOT standards
- Designed roadway and bridge plans using Civil 3D incorporating AASTHO design specifications
- Drafted technical specifications and bid documents for road projects under local procurement regulations
- Prepared cost estimates for bridge and road construction using industry-standard estimation tools

**Research Assistant – Center for Water Resources, Nepal**

Aug 2022 – Jan 2023

- Initiated and coordinated with national agencies to implement the Pfafstetter river coding system across 6000+ rivers
- Directed a 4-member team on national hydropower analysis, delivering policy guidance on demand and climate risks

**Enumerator – Government of Nepal**

May 2022 – Jun 2022

- Coordinated surveys of 15 remote communities, analyzing demographic water resource data for policy use

## ACADEMIC PROJECTS

- Hydrodynamic study report of the Red Cedar River, East Lansing using **SMS and SRH-2D**
- Hydraulic and hydrological modeling of the Bagmati River, Nepal using **HEC-RAS and HEC-HMS**
- Coupled surface-groundwater modeling report of Kalamazoo watershed using **SWAT and MODFLOW**
- Topographic detailing and bridge, road site selection in Kirtipur, Nepal using **AutoCAD, CIVIL 3D**
- Groundwater flow and contamination source assessment of Saginaw Aquifer using **IGW-NET**
- US national survey (600+ individual) on drinking-water quality and evaluating risk perception using **Qualtrics and R**
- Design of drip and sprinkler irrigation using **Google Earth**

## RESEARCH ARTICLE AND PRESENTATION

- Led authorship of 3 peer-reviewed journal articles, with additional manuscripts under review and in preparation
- Presented research through oral and poster sessions at AGU, WaterCube NRT Retreat, and University symposia

## ACHIEVEMENT/AWARD

- Awarded \$40,000 merit-based full tuition scholarship for MS leading to PhD in Civil Engineering program
- Awarded NSF-funded WaterCube NRT Fellowship, Michigan State University (2024–2025), valued at over \$34,000
- Served as Vice President, Nepalese Student Association at MSU

## LICENSURE

- Passed the **Fundamentals of Engineering (FE) exam**, Michigan PE Board Nov 2024
- **Registered Engineer** - Nepal Engineering Council, Registration Number: **31659** Aug 2022
- Autodesk **Civil 3D** and **AutoCAD** certified May 2020