ALKA TIWARI

Curriculum Vitae

School of Agricultural and Biological Engineering
Interdisciplinary Ecological Sciences and Engineering
Purdue University, West Lafayette, IN, 47907

765-409-8317
tiwari13@purdue.edu
www.linkedin.com/in/alkapurdue/

EDUCATION

2024 Ph.D. Agricultural and Biological Engineering, Purdue University, USA

2015 M.Tech. Civil Engineering, Indian Institute of Technology (IIT) Kanpur, India

2012 B.Tech. Kamla Nehru Institute of Technology (KNIT), Sultanpur, India

RESEARCH INTERESTS

Hydrometeorology
Satellite Remote Sensing
Extreme Events (Tropical Cyclones)

FELLOWSHIPS

- NASA FINESST Fellowship 2019 – 2022

  Future Investigators in NASA Earth and Space Science and Technology (FINESST) awarded by USA Government to student for 3 years for a well-defined research problem and a justification of its scientific significance to NASA with an acceptance rate of about 15%

- Bilsland Dissertation Fellowship 2023

  A Purdue Graduate School fellowship which provides support to an outstanding Ph.D. candidate in the final year of doctoral degree completion

- ESE-Lynn Fellowship awarded 2018

  Awarded to outstanding Ph.D. students while recruiting to interdisciplinary graduate programs at Purdue University

- MHRD, Govt. of India Scholarship 2013 – 2015

  Awarded to student who achieve a high score in the GATE Examinations by Indian Government

- KNIT Merit Student Scholarship 2008 – 2012

  Awarded to three students who scored top most score in the competitive entrance exam

AWARDS

- AMS Travel Grant for American Meteorological Society (AMS) Annual Meeting 2024
- Purdue Graduate Student Government (PGSG) Travel Grant for oral presentation at American Geophysical Union (AGU) Fall Meeting 2022

- AGU Precipitation TC Student Award for presentation at American Geophysical Union (AGU) Fall Meeting 2021
- Secured top 3 percentile in the National Graduate Aptitude Test in Engineering (GATE) twice amongst 36156 candidates in 2012 and 67472 candidates 2013
- Dr. S. Radhakrishnan Award for IIISCE (Indian Institute for International Studies & Cultural Exchange).

WORK EXPERIENCE

Graduate Teaching Assistant - Purdue University, USA Aug 2018 – Aug 2019

- Teaching, grading and guiding undergraduate students for Hydraulics lab.

Project Associate - Indian Institute of Science, Bangalore, India May 2017 – Nov 2017

- Participated in urban flooding monsoon school (2-week duration) assisted and worked with SWMM software for Bengaluru flooding case studies.
- Project using SWAT and VIC for catchment hydrology and climatic and landcover changes.
- Data preparation and analysis in ArcGIS and developed MATLAB codes for synthesis and data visualization.
- These projects are part of a multi-institutional research consortium as well as Indo- UK collaboration.
- Also worked on using ensemble GFS output from NCMRWF into experimental streamflow model outlooks in real-time for Tungabhadra river basin.

Assistant Professor - School of Civil Engineering, KIIT Bhubaneswar, India Jul 2015 – May 2017

- Courses taught: Hydrology, Fluid Mechanics, Open Channel Flow, Construction Planning & Management, Water Resource Design, Engineering Graphics.
- Project guide for senior projects on various hydrology, hydro-climatic, water resources topics.
- Mentoring students with undergraduate research projects.

Summer Research Trainee, Civil Engineering Department, East Central Railway, Dhanbad, India Jun 2011 – Jul 2011

- Worked as a team member, analyzed various construction work flow plans and studied engineering drawings, developed project presentations and internship report.

Summer Research Trainee, Civil Engineering Department, NTPC Limited, Rihand Nagar, India Jun 2010 – Jul 2010

- Interned in a project team on various project management aspects related to construction and scheduling, developed assessment report.

SERVICES

American Meteorology Society (AMS) Hydrology STAC Committee Jan 2023 – Present
Diversity, Equity & Inclusion (DE&I) Chair *(elected)*

- Lead Annual AMS Hydrology Townhall and Panel Discussion 2024
- Developed the proposal for Townhall
- Coordinated with team members and selected panelists and moderating the Townhall

American Meteorology Society (AMS) Hydrology STAC Committee Nov 2022 – Present
Student Member of Award Committee, Horton Lecture Award in Hydrology subcommittee, Membership Committee and Social-Media subcommittee

- Help coordinating and finalising the Horton Lectures Award
- Help coordinating and executing the responsibilities in each subcommittee

Purdue Graduate Student Government (PGSG) at Purdue University Feb 2020 – Jul 2023
Chair, Community Team *(elected)*

- Organizing volunteer, professional development, and mental health awareness week related activities for graduate students to bridge the gap between the Lafayette community and graduate community on campus.
- Writing legislation for the student senate to vote on various issues

Purdue Graduate Student Government (PGSG) at Purdue University Aug 2018 – Jan 2020
Senator , Ecological Sciences and Engineering *(elected)*

- Attend monthly meeting, raise concerns and participate in voting for graduate student related issues.
- Coordinate with ESE department graduate students to bring their academic, mental, physical and living concerns to PGSG Senate.

SKILLSETS

Programming: Python, Shell Script, Linux, R, MATLAB

Experience and/or interest in geospatial data formats: GeoTIFF, NetCDF, HDF5, GRIB, Zarr, ASCII

Strong Skills: ArcGIS, QGIS, GEE, FRAGSTATS, HEC-HMS, HEC-RAS, VIC

Familiar with: SWAT, Tableau, Git, Github, Machine Learning and Deep Learning concepts using Python (e.g., scikit-learn, PyTorch) and interest in learning sophisticated and state-of-the-art approaches.

JOURNAL MANUSCRIPTS

1. Li, Z., **Tiwari, A.**, Sui, X., Garrison, J., Marks, F., & Niyogi, D. (2023). Studying Brown Ocean Re-Intensification of Hurricane Florence Using CYGNSS and SMAP Soil Moisture Data and a Numerical Weather Model. Geophysical Research Letters, 50(19), e2023GL105102.

2. Patel, P., Ankur, K., Jamshidi, S., **Tiwari, A.**, Nadimpalli, R., Busireddy, N. K. R., ... & Niyogi, D. (2023). Impact of urban representation on simulation of hurricane rainfall. Geophysical Research Letters, 50(21), e2023GL104078.

CONFERENCE MANUSCRIPT AND PRESENTATIONS

3. **Tiwari, A.**, Cherkauer, K. A., Tung, W. W., Marks, F. D., & Niyogi, D. (2023, January). Variability in Tropical Cyclone Precipitation Estimates from Gridded Data Products and Its Implication on Hydrological Analysis. In the 103rd AMS Annual Meeting. AMS. Oral Presentation.

4. **Tiwari, A.**, Cherkauer, K. A., Marks, F., Tung, W. W., & Niyogi, D. (2022, December). Characterizing Hydrology for Tropical Cyclone Precipitation using Satellite, Radar-blended and Gauge-based Precipitation Products. In the Fall Meeting 2022. AGU. Poster Presentation.

5. **Tiwari, A.**, Cherkauer, K., Tung, W. W., Marks, F., & Niyogi, D. (2021, December). Characterizing the tropical cyclone rainfall using satellite, radar-blended and gauge-based precipitation products for hydrological studies. In AGU Fall Meeting Abstracts (Vol. 2021, pp. H14F-03). Oral Presentation.

6. **Tiwari, A.**, Kumar, A., Nair, U. S., Merwade, V., Marks, F., & Niyogi, D. (2020, December). An IMERG based Assessment of the Contribution of Landfalling Tropical Cyclones to Rainfall Climatology in the US Atlantic Basin. In AGU Fall Meeting Abstracts (Vol. 2020, pp. H200-0019). Poster Presentation

7. **Tiwari, A.**, Busireddy, N. K. R., Patel, P., Merwade, V., Jamshidi, S., Marks, F., ... & Niyogi, D. (2019, December). Assessing Variability in Multi-sensor Tropical Cyclone Rainfall Estimates and the Impact on Urban Flood Simulation for Hurricane Florence (2018). In AGU Fall Meeting Abstracts (Vol. 2019, pp. H31D-03). Oral Presentation.

8. **Tiwari, A.** and Niyogi, D., (2018, August). Urbanization Impacts on Rainfall and Temperature Changes over Asia Region, Paper 9E.4, ICUC10 - 10th International Conference on Urban Climate/14th AMS Symposium on the Urban Environment, New York City. Oral Presentation.

MANUSCRIPTS REVIEWED

1. Reviewed for Environmental Processes, Springer Nature

2. Reviewed for Journal for Applied and Meteorology and Climatology (JAMC)

3. Reviewed for Bulletin of American Meteorological Society (BAMS)

4. Reviewed for Journal of Hydrometeorology (JHM)