

Tri Dev ACHARYA, PhD

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EDUCATION

Combined MS and PhD in Civil Engineering, Kangwon National University, Korea Feb 2018
Bachelor of Engineering in Geomatics Engineering, Kathmandu University, Nepal Nov 2011
Interest Area Geomatics, machine learning, land cover/use change, surface water, natural disaster, transportation
Self Learning LinkedIn learning paths: Diversity, Inclusion, and Belonging for All; Becoming a Project Manager; Become a Senior Manager
UC Davis: Unlocking the Inspiring Aspects of Teaching; EDU 398: Seminar on College Teaching; Career Champions for Staff; Graduate Student and Postdoc Certificate Series

SKILLS

Language/Framework R/Rstudio, Python/Anaconda, HTML
Geospatial tools ArcGIS (Desktop & Pro), QGIS, GDAL, ENVI, ILWIS, SAGA, Global Mapper, Cyclone, AutoCAD, Google Earth Engine
Data mining tools WEKA, Rattle, RapidMiner, SPSS, Orange
Other tools MATLAB, MS Office and 365 Suite, Google Suite, MS Project, Adobe Photoshop

PROFESSIONAL EXPERIENCES(Voluntary positions^)

Postdoc-Employee, Institute of Transportation Studies, UC Davis, USA Oct 2019 – Present

- Collect and maintain a geospatial database for the STEPS+ projects.
- Spatial analysis of transportation systems, including travel demand, infrastructure needs, and locations, emissions impacts, and sourcing of fuels and feedstock for heavy-duty, light-duty, and electric vehicles.
- Spatial optimization, footprint analysis, and supply chain networks such as pipelines, trucks, etc for hydrogen refuelling and production sites across California.
- Assist in identifying geospatial components and mapping for the hydrogen hub in collaboration with UC's Alliance for Renewable Clean Hydrogen Energy Systems (ARCHES), UCOP and GO-Biz.
- Monthly updates on the Advisory board meetings and quarterly sponsor-only webinars, STEPS+ conferences.

Adjunct Scientist^, Gandaki Province Academy of Science and Technology, Nepal Mar 2022 – Present

- Guide at least two fellows or interns every year based on the matching expertise.
- Conduct programs and seminars for different education, research, and government organizations.
- Advise a minimum of 10 hrs per year on research and development activities on behalf of the organization.

Technical Advisor^, Neer Interactive Solutions Pvt. Ltd., India Jan 2022 – Present

- Assist in the development of standard operation products according to client's needs.
- Guide on the implementation of machine learning on geospatial data and final products.
- Feedback on a minimal viable product to develop a fully functional workflow/model/product.

Senior Advisor^, Geospatial Foundation Nepal, Nepal Nov 2018 – Present

- Training enthusiasts from private and government sectors on geospatial technology and analysis.
- Teaching students and researchers on geospatial research through open-access resources.
- Special training in drafting, submitting, and reviewing manuscripts for journals.
- Guiding students to identify and execute their university research projects.
- Tailored career plan for further study in GIScience.

Technical Advisor^, South Asian Consultants and Builders Pvt. Ltd., Nepal Nov 2018 – Present

- Assist in the preparation of project proposals.
- Train staff and collaborators to implement geospatial technologies in the project.
- Monitor and control all geospatial activities throughout the project life-cycle to ensure project objectives.

Visiting Postdoctoral Researcher, School of Geomatics & Urban Spatial Informatics, Beijing University of Civil Engineering and Architecture, China Jan 2019 – Oct 2019

- Supervised students on geospatial data management, analysis, and dissemination through open-source programs.
- Guided graduate students to execute and publish their graduate research projects.
- Assisted conference and international affairs on behalf of the department.
- Career planning for further studies in graduate schools.

Senior Researcher, Institute of Industrial Technology, KNU, Korea Mar 2018 – Oct 2019

- Involved in airborne LiDAR data evaluation projects by the National Research Foundation, Korea, and Korea Institute of Ocean Science and Technology.
- Taught and trained undergraduate and graduate GIS and Remote Sensing classes.
- Coordinated lab projects and members in conducting research and publication works.

- Graduate Researcher**, Institute of Industrial Technology, KNU, Korea Mar 2015 – Feb 2018
- Involved in R&D project by Korea Hydrographic and Oceanographic Agency for bathymetric mapping.
 - Applied remote sensing techniques for surface water, land cover, and disaster mapping.
 - Handle data, reports, and academic publications related to academic researches and projects.
- Teaching Assistant**, GIS Lab, KNU, Korea Aug 2012 – Feb 2016
- Taught “Remote Sensing for Climate Change” to final year undergraduate.
 - Managed English-related correspondence for the professor, lab, and department.
 - Conducted geospatial lab and fieldwork for undergraduate students.
- Geospatial Analyst (Consultant)**, WaterAid in Nepal (WAN), Nepal Dec 2011 - May 2012
- Involved in Water and Sanitation Point Mapping (WSPM) of Itahari & Biratnagar municipalities, Nepal project.
 - Collected GPS location and other attributes for water and sanitation points in the project area.
 - Tested water quality parameters for all the water points using ENPHO’s field test kit.
 - Linked WSPM application with WAN's Long-Term Sustainability Monitoring and Data Bank tools.
 - Developed training manuals for WSPM, Google Earth, GPS, and basic GIS application and trained WAN and their partners' staff.
- Geospatial Developer (Intern)**, WAN, Nepal Jul 2011 - Sep 2011
- Involved in WSPM of Kamalamai and Itahari Municipalities, Nepal project.
 - Collected GPS location and other attributes for water and sanitation points in the project area.
 - Tested water quality parameters for selected water points using ENPHO’s field test kit.
 - Configured and modified Water Point Mapper tool developed by WaterAid in the UK for sanitation.
- Social Survey Researcher (Consultant)**, Prompt Info Solution Pvt. Ltd.; Nepal May 2011 - Jun 2011
- Involved in educational status of children in families working at brick kilns in Bhaktapur District, Nepal project.
 - Conducted a social survey to understand the education status of children working in brick kilns.
 - Prepared and submitted a detailed report to the Department of Education, Nepal.

SELECTED PUBLICATIONS (Mentored Students*)

Journal Papers (05/49)

- Thalli Mani, S.; Kolluru, V.; Amai, M.; **Acharya, T.D.** Enhanced streamflow simulations using nudging based optimization coupled with data-driven and hydrological models, *Journal of Hydrology: Regional Studies*, Volume 43, 2022. <https://doi.org/10.1016/j.ejrh.2022.101190>
- KC, S.*; **Acharya, T.D.** Advancements of Geodetic Activities in Nepal: A Review on Pre- and Post-2015 Gorkha Earthquake Eras with Future Directions. *Remote Sensing*, Volume 14, Number 7, 2022. <https://doi.org/10.3390/rs14071586>
- Yu, T.*; Huang, H., Jiang, N.; **Acharya, T.D.** Study on Relative Accuracy and Verification Method of High-Precision Maps for Autonomous Driving. *ISPRS International Journal of Geo-Information*, Volume 10, Number 11, 2021. <https://doi.org/10.3390/ijgi10110761>
- Wagle, N.*; **Acharya, T.D.**; Kolluru, V.; Huang, H.; Lee, D.H. Multi-Temporal Land Cover Change Mapping Using Google Earth Engine and Ensemble Learning Methods. *Applied Sciences*, Volume 10, Issue 22, 2020. <https://doi.org/10.3390/app10228083>
- Acharya, T.D.**, Subedi, A.* & Lee, D.H. Evaluation of Machine Learning Algorithms for Surface Water Extraction in a Landsat 8 Scene of Nepal. *Sensors* Volume 19, Number 12, 2019. <https://doi.org/10.3390/s19122769>

Oral Presentations (03/30)

- Ran, P.*; Huang, H.; **Acharya, T.D.** Spatiotemporal changes of riverbed and surrounding environment in Beijing section of Yingdong River during the past half century. The 8th International Multi-Conference on Engineering and Technology Innovation 2019 (IMETI2019) November 15-19, 2019, Kaohsiung, Taiwan.
- Acharya, T.D.**; Lee, D.H. Landslide Hazard Assessment using Machine Learning Methods, 2018 Conference of The Korean Society for Geospatial Information Science. May 18-19, 2018. Gyeongnam National University of Science and Technology, Jinju, Korea.

Poster Presentations (02/24)

- Acharya, T.D.**; Fulton, L., Vijayakumar, V.*; Jenn, A.; Jaller, M. Suitability and Footprint Analysis for Hydrogen Refueling Stations within California, STEPS+ Spring Research Symposium, May 12-13, 2022. Davis, USA.
- Vijayakumar, V.*; **Acharya, T.D.**, Jenn, A., & Fulton, L. Spatially optimized locations and technology for hydrogen refueling of trucks, STEPS+ Fall Symposium, December 10-11, 2019. Davis, USA.

Others (02/07)

- Acharya, T. D.**, Jenn, A. T, Miller, M. R, & Fulton, L. M. (2021). New UC Davis Model Shows Promise in Identifying Optimal Locations of Hydrogen Refueling Stations for Medium- and Heavy-Duty Trucks in

California. *UC Office of the President: University of California Institute of Transportation Studies*. <http://dx.doi.org/10.7922/G27P8WP4> Retrieved from <https://escholarship.org/uc/item/2qw8464c> [**Policy Brief**]

2. **Acharya, T.D.** Hydrogen Infrastructure for Sustainable Future of Transportation. *ISPRS SC Spectrum*, Volume 14, Number 1, 2021. <https://www.researchgate.net/publication/348154890>

AWARDS AND SCHOLARSHIPS

Featured on UC Davis Engineering an Inclusive Future: https://lnkd.in/d8R-z_z	Dec 2020
Best Oral Presentation, GISUP 2020, Beijing, China [Online]	Nov 2020
Spatial Modeling of Future Light- and Heavy-Duty Vehicle Travel and Refueling Patterns in California [Lead: Lew Fulton]	Aug 2019
KNU Postdoctoral Researcher Support Fund, Top 2% Postdoc in KNU	Aug 2019
Young Investigator Award, Korean Society of Surveying, Geodesy, Photogrammetry, and Cartography	Apr 2018
Outstanding Academic Award, Kangwon National University	Feb 2018
Recognition Award, The Korean Association of Geographic Information Studies	Feb 2018
The ISPRS Foundation (TIF) Support and Travel Grant, ISPRS Congress, Prague	Jul 2016
Bring Excellent Student to Kangwon National University Scholarship, Korea	2012 - 2016
Best Business Plan Award, Kathmandu University, Nepal	Aug 2011

OTHER ACTIVITIES

Reviewer for various peer-reviewed journals.

Guest Editor for *Sensors & Materials* and *Remote Sensing*.

Invitee to various talks and conferences about GeoEd and GeoCareer.

Organizer, 2018 and 2016 Joint Int'l Symposium of GISUP – KOGSIS, Korea.

Executive Member 2008, Geomatics Engineering Society, Kathmandu University, Nepal.

Auditing various Machine Learning courses in online platforms such as ESRI, Coursera, and Udemy.

Member of Korean and Nepalese professional organizations: Korean Spatial Information Society, Nepal Geomatics Engineering Society, Korean Association of Geographic Information Studies, Korean Society of Surveying, Geodesy, Photogrammetry and Cartography, Nepal Engineering Council.