

Arun Kumar Bhomi

Geomatics Engineer

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 arun-bhomi

Work Experience

GIS Engineer/Senior Surveyor

Jan 2025 - Present

Kathmandu Metropolitan City [Kamaladi, Kathmandu]

- Led ward-level planning meetings with local representatives for Collection, Verification and Standardization of road name across multiple wards and systematically updated the digital GIS Database for KMC.
- Contributed to the development and enhancement of KMC's Web Map Portal, integrating multiple spatial layers including cadastral boundaries, GLD road, land use zoning, and other municipal datasets.

Data Associate/Geomatics Engineer

Aug 2024 - Jan 2025

Genesis Consultancy Pvt Ltd. [Lalitpur, Kathmandu]

- Conducted spatial and non-spatial data analysis for the **WASH (Water, Sanitation and Hygiene)** project, supporting evidence based planning and infrastructure development.
- Developed an interactive WebGIS portal featuring building footprints, roads, and municipal boundaries using PHP and SQL for spatial database management.

Geospatial Data Analyst Intern

March 2024 - May 2024

Kathmandu Living Labs [Chundevi, Kathmandu]

- Worked on Cartography Section. Designed Dark Map Style for “Baato”.
- UAV Survey to build 3D Model of Kathmandu University Area.
- GIS Analysis to estimate the height of buildings.

Education

Kathmandu University

2019–2024

Bachelor in Geomatics Engineering (BE)

Dhulikhel, Nepal

- CGPA: 3.86/4.00
- 35% Government (LMTC) Scholarship and Academic Merit Scholarship.

St. Xavier's College

2017–2019

School Leaving Certificate (SLC)

Maitighar, Nepal

- CGPA: 3.48/4.00
- Best Student Award with Fr. Charles A. Law, S.J. Memorial Award for Excellence in Social and Environmental Responsibility.

Bagiswori Higher Secondary School

2017

Secondary Education Examination (SEE)

Bhaktapur, Nepal

- CGPA: 3.75/4.00

Publications / Projects

Monitoring Water Turbidity in the Chiang Rai Reach of the Mekong River Using Sentinel-2 NDTI.

Dec, 2025

- Conducted satellite-based water quality monitoring using Sentinel-2 multispectral imagery to analyze spatial and temporal turbidity variations in the Mekong River (2019–2024).

- Applied the Normalized Difference Turbidity Index (NDTI) to quantify river turbidity and examined its seasonal behavior in relation to monsoon rainfall patterns and water surface area changes.
- Performed time-series and spatial analysis to identify peak turbidity periods and assess sediment transport dynamics in a transboundary river system.
- Paper published in RMUTL Engineering Journal, Vol. 10, Issue 2 (Dec 2025). [Link to Paper](#)

• Assessing Coral Reef Changes through Supervised Classification and correlating it with SST and Chlorophyll-A: A Remote Sensing Approach.

May, 2024

- Carried out project in Google Earth Engine. Used Supervised Image Classification and compared three machine learning algorithm: Random Forest (RF), Classification and Regression Task (CART) and Support Vector Machine (SVM).
- Developed the prediction model of Sea Surface Temperature using ARIMA Model.
- Paper Published in 9th FIG (International Federation of Surveyors) Regional Conference 2024 (Nov, 2024). ISBN 978-87-93914-18-6. ISSN: 2308-3433. [Link to Paper](#)

• Assessing the Impact of Urban Expansion on Forest Cover using LULC Maps, NDVI, and NDBI: A Case Study of Kathmandu District.

Nov, 2023

- Classified the LANDSAT-8 Images using Supervised Image Classification. Calculated Users, Producers, Overall Accuracy and Kappa Coefficient. Finally, Interpreted all the resulted data and prepared the time-series analysis and map.
- Paper Published in a journal of Survey Department, JOURNAL ON GEOINFORMATICS, Number:23 (May/June, 2024). ISSN: 2717 - 5022. [Link to Paper](#)

• UAV Images for Agriculture Land Parcel Delineation through Edge Detection Algorithm: A Case Study of Hilly and Terai Regions.

Dec, 2022

- Utilized GIS Methodologies in-built algorithm: Edge Detection Algorithm to compare the parcel delineation between Hilly and Terai Regions.
- Paper Published in a journal of Survey Department, JOURNAL ON GEOINFORMATICS, Number:22 (May/June, 2023). ISSN: 2717 - 5022. [Link to Paper](#)

Projects

• GeoSpatial Climate Impact Modeling and Real-Time Hazard Simulation Tool for Enhancing Urban Planning, Risk Assessment, and Community Preparedness.

Dec, 2025

- Achieved 3rd place internationally at the VCSP Hackathon 2025, winning a \$500 award for the project.
- Developed GeoClimate, an interactive land-climate risk simulation platform featuring dynamic flood and urban heat modeling using geospatial and climate datasets.

• Flood and Landslide Hazard Mapping Using UAV Imagery, Multi-Source Satellite Data, and Advanced Deep Learning Techniques.

Aug 2025

- Applied advanced deep-learning models for flood and landslide hazard mapping, achieving 92% accuracy with U-Net for reliable geospatial risk prediction.

• Suitability Analysis for the appropriate Dumpsite on Bhaktapur District using MCDA analysis [Multi-Criteria Decision Analysis] in GIS.

May, 2022

- Applied Multi-Criteria Decision Analysis (MCDA) in GIS Software followed by Analytic Hierarchy Process (AHP) Method for locating the suitable place considering different factors.

Workshops / Trainings

International Federation of Surveyors (FIG) Regional Conference, 2024. Participant (Selected)

Kathmandu, Nepal
Nov, 2024

- Awarded with a grant scholarship to support my participation.
- Presented my final-year thesis paper “Monitoring Coral Reefs and correlating it with SST and Chlorophyll-A” at FIG 2024

2024 International GeoInformatics Summer School (IGSS).

Wuhan University, China

June, 2024

Participant (Selected)

- Awarded with Scholarship of 8000 CNY.
- Participated in IGSS-24 organized by LIESMARS (State Key Lab of Information Engineering in Surveying, Mapping and Remote Sensing), Wuhan University.

CLImbing for CLImate GEOspatial School (CLIGEOS-2024).

Annapurna-3, Lumle, Nepal

April, 2024

Participant (Selected)

- Participated in CLIGEOS-24 organized by ISPRS, LJ University, Universita Degli Studi Di Udine and CSSGS.

Workshop and Mapathon on Map Roads: Make your Way.

Dhulikhel, Nepal

Nov, 2023

Instructor (Trainer)

- Trained around 50 people about basic OSM.

Survey Camp under NCP Student Exchange Program.

Dhulikhel, Nepal

Nov, 2023

Participant (Selected)

- 7 Day Survey Camp with Australian Student of University of Southern Queensland.

Workshop of Advanced Training of OSM “Training of Trainee”.

Dhulikhel, Nepal

June, 2022

Participant (Selected)

- 2 Days Residential Workshop on Training of OSM.

Awards and Achievements

- Secured 3rd place in the VCSP Hackathon 2025 (International Level) and awarded \$500 for an innovative geospatial solution. Dec, 2025
- Scholarship Awarded for Participating in 2024-International GeoInformatics Summer School organized by LIESMARS Wuhan University, China. June, 2024
- 35% Government(LMTC) Scholarship in Undergraduate Program. 2019-Current
- Survey Camp under NCP Student Exchange Program, University of Southern Queensland. Nov, 2023
- Most Creative Idea in the Hackathon for Field Mapping Task-Splitting Algorithm.
 - Hackathon for Field Mapping Task-Splitting Algorithm organized by NAXA, KLL, NGES, HOT, and Open Mapping AP-HUB.
- Academic Merit Scholarship, Kathmandu University. 2022
- 2 Days workshop of Advanced Training of OSM “Training of Trainee”. June, 2022
- Open Street Map and Humanitarian mapping by United Nations Global Centre. April, 2022
- Webinar envisioning spatial analysis through SuperMap: A new era of Geospatial Science May, 2021
- Best Student Award with Fr. Charles A. Law Certificate, St. Xavier's College.
 - The Fr. Charles A. Law, S.J. Memorial Award for Excellence in Social and Environmental Responsibility. March, 2019

Skills

- **Geospatial Tools:** GIS, Remote Sensing, Image Processing, Google Earth Engine(GEE), WebGIS, Spatial Database Management.
- **Surveying:** Aerial(UAV) Survey, DGPS Survey, LiDAR Survey, Hydropower Survey
- **Programming:** Python, JAVA, PHP
- **Typesetting:** Latex, Nepali Unicode

Languages

- **English:** Fluent
- **IELTS Academic:** Overall Band 7.0 [CEFR Level: C1]
- **Nepali:** Native
- **Newari:** Fluent
- **Hindi:** Conversational

References

Professional Reference:

Er. Ashok Shrestha

- Survey Officer, GIS Specialist
- Kathmandu Metropolitan City, Government of Nepal
- Kathmandu, Nepal
- shresthashok550@gmail.com
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Academic Reference 1:

Dr. Subash Ghimire

- Head of Department, Department of Geomatics Engineering
- Kathmandu University
- Dhulikhel, Nepal
- subash.ghimire@ku.edu.np
- +977-9841797156

Academic Reference 2:

Er. Umesh Bhurtyal

- Head of Department, Department of Geomatics Engineering
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- Pokhara, Nepal
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