

Arun Kumar Bhomi

Geomatics Engineer

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 arun-bhomi

Research Interests & Profile Summary

Geomatics Engineer with a CGPA of **3.86/4.00**, experienced in GIS, Remote Sensing, UAV mapping, and spatial database management. Published author in FIG 2024 and national geoinformatics journals, with expertise in supervised classification, spatial analysis, and WebGIS development. Skilled in Python and SQL, with experience in academic training, workshops, and field surveys. **Research interests** include environmental monitoring, machine learning for geospatial data, climate and disaster risk mapping, urban expansion analysis, WebGIS, and UAV-based surveying. Seeking opportunities to contribute to geospatial research and support academic projects.

Work Experience

Senior Surveyor

Jan 2025 - June 2025

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 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-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

- **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 GEOINFORMATIS, 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 GEOINFORMATIS, Number:22 (May/June, 2023). ISSN : 2717 - 5022. [Link to Paper](#)
- **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

- 2024 International GeoInformatics Summer School (IGSS) Participant (Selected)** Wuhan University, China June, 2024
 - 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). Participant (Selected)** Annapurna-3, Lumle, Nepal April, 2024
 - 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. Instructor (Trainer)** Dhulikhel, Nepal Nov, 2023
 - Trained around 50 people about basic OSM.
- Survey Camp under NCP Student Exchange Program. Participant (Selected)** Dhulikhel, Nepal Nov, 2023
 - 7 Day Survey Camp with Australian Student of University of Southern Queensland.
- Workshop of Advanced Training of OSM “Training of Trainee”. Participant (Selected)** Dhulikhel, Nepal June, 2022
 - 2 Days Residential Workshop on Training of OSM.

Awards and Achievements

- 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. May 2023
 - Hackathon for Field Mapping Task-Splitting Algorithm organized by NAXA, KLL, NGES, HOT, Open Mapping AP-HUB.
- Academic Merit Scholarship, Kathmandu University. 2022
- International Geoinformatics Summer School, Wuhan University. Aug, 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. March, 2019
 - The Fr. Charles A. Law, S.J. Memorial Award for Excellence in Social and Environmental Responsibility.

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