Er. Bimal pokhrel

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EDUCATION

Bachelor of Engineering in Geomatics Engineering, Tribhuvan University, Nepal   Nov 2018 – June 2023
Percentage grade: 72%

Higher Secondary Level Study, Rammani Multiple Campus, Nepal   June 2016 – May 2018
Percentage grade: 3.21 GPA

Secondary Level Study, Sanjivani Shiksha Sadan, Nepal   April 2016
Percentage grade: 3.6 GPA

PROFESSIONAL AFFILIATION

Category 'A' Certified General Engineer, Nepal Engineering Council (NEC)

ACHIEVEMENT AND AWARDS

Certificate of Appreciation for contributing as a Lead Trainer on "**Climate Change Adaptation Training**"	2024
Selected for **GNSS Summer School, 2024**	2024
Reached final round in **Esri India Young Scholar Program 2024**	2024
Selected for Hackathon for **field mapping splitting algorithm** organised by NAXA	2023
Participated in the National conference on the Recent Trends in Science, Technology and Innovation, RTSTI	2022
Training on DGPS and Terrestrial Lidar scanner by CSSGS,	June 2022
"**Certificate of OSM and field data collection Trainer**" by GESAN	2023
"**Certificate of OSM trainer**" by Tikapur AG campus	2022
Completed "**14 Days OSM Monsoon Mapping Challenge**"	2021
First runner-up in **Mapathon**	2019
Second Position holder of **Rammanni Multiple Campus**	2018

PUBLICATIONS (Google Scholar)

(Accepted and published on JES vol. 3 issue 2) (doi.org/10.3126/jes2.v3i2.72191)

- Urbanization and Its Impact on Land Use and Land Cover in Dhangadi Sub-Metropolitan City: Comprehensive Analysis and Forecasting.

Under Review Papers

- Evaluation of Transferability of Water Quality Models Using Remote Sensing and Regression Approach in Phewa and Begnas Lakes.
- Evaluating Land Use/Cover Trends and Eco-Environmental Quality Based on Remote Sensing Ecological Index (RSEI) using Google Earth Engine: A Case Study of Rupandehi, Nepal. *(Ongoing Major Revision)*
  Remote Sensing, Land Use/Cover Mapping and Trend Analysis Using Google Earth Engine

RESEARCH EXPERIENCE

- **Independent Research, " Urbanization and Its Impact on Land Use and Land Cover in Dhangadi Sub- Sub-Metropolitan City: Comprehensive Analysis and Forecasting "** *(Mentored by Umesh Bhurtel)*
  - forecasting of Land Use and Land Cover (LULC) changes using IDRISI SELVA and Conducted comprehensive analysis using Arc GIS for land use/cover trends in Dhandgadi, Nepal (2002-2022).

- **Independent Research, "Evaluation of Transferability of Water Quality Models Using Remote Sensing and Regression Approach in Phewa and Begnas Lakes"** *(Mentored by Tri Dev Acharya, PhD)*
  - Applied regression analysis to Sentinel imagery to assess water quality in Phewa and Begnas Lakes.
  - Compared satellite-derived water quality with in-situ data and explored the model's efficiency while transferring it to other locations.

- **Independent Research, "Evaluating Land Use/Cover Trends and Eco-Environmental Quality Based on Remote Sensing Ecological Index (RSEI) Using Google Earth Engine: A Case Study of Rupandehi, Nepal"** *(Mentored by Tri Dev Acharya, PhD)*
  - Conducted comprehensive analysis using Google Earth Engine, analysed land use/cover trends and Eco-Environmental Quality in Rupandehi, Nepal (1992-2023) using RSEI and Landsat imagery.

- **Research Assistant (Volunteer), " Time-Series Mapping of Land Use and Land Cover (LULC) for Future LULC Forecasting using Geospatial Techniques: A Case Study of Chitwan District, Nepal"** *(Mentored by Er Netra Bahadur Katuwal)*
  - Preparation of Land Use and Land Cover Map of Chitwan for a different time interval (2000, 2010, 2020).
  - Conducted the forecasting of Land Use and Land Cover (LULC) changes using the Artificial Neural Network (ANN) through the MOLUSCE plugin in Quantum GIS version 2.18.24 software.

- **Undergraduate Thesis, " Water Quality Analysis of Phewa and Begnas Lake using In-situ Method and Remote Sensing "** *(Mentored by Dr. Hari Sharan Adhikari, Ass. Prof by Er Netra Bahadur Katuwal)*
  - Created Water quality analysis in the Lab.
  - Prepared water quality Model using Remote sensing technique to predict the concentration of pH level, Dissolved Oxygen, Total Dissolved Solid and Total Suspended Solids

WORK EXPERIENCE

- **Geographic Information System Analyst – Mappers Nepal**   May 2023 – Present
  Working as a GIS Analyst for multiple GIS Projects:
  - **Land Use Planning And its Classification Project:** Planned and prepared a Land Use Database using GIS that would assist the local government and Survey Officers classify every parcel based on the prepared dataset. The project also helps to allocate and conserve agricultural land as well as assist in adopting smart urban models which has been done in more than 8 municipalities and 9 rural municipalities.
  - **Risk Map Preparation of Devdaha Municipality:** Data collection from secondary sources like (Survey Office, and ICIMOD) and some field verification was done. Using such data and Sentinel Imaginary, a Risk Map was prepared and submitted to the municipality which assisted the planners and local people in becoming aware of such risks (Flood, Fire, landslide, Accident etc).
  - **Resource Mapping:** Research is about to be completed and we have prepared a web map portal which demonstrates the infrastructure resources (Schools, Roads, health offices, Hotels, Hospital, Market etc), along with some additional attribute information like (population density, Male female proportion)

- **Survey Instructor – Universal Engineering and Science College**   Jan 2024 – Present
  Working as a Part-time survey instructor in UESC and conducted 2 Survey close camps where students were trained about various instruments and survey techniques as well as their real field application in (Topographic survey, Bridge survey, Cadastral survey, Hydropower survey).

- **Teaching assistant: Shree Phutung Secondary School, CTEVT**   Nov 2023– Present
  Worked as a Part-time Teaching Assistant with major courses in Geodesy and Astronomy, Remote-Sensing and Surveying.

- **Lidar Survey at Tamor Hydropower**   Aug-Dec 2024
  Conducted aerial Lidar survey and DGPS survey as Geomatics Engineer

- **DGPS Survey for Historical Monumentation Renovation Project**   Dec 2024
  Working as DGPS operator for survey at Thapathali area.

- **Drone Surveyor**   Nov 2021
  Worked as Drone Sub-Pilot for 2 Week Drone Survey at
  Tilottama Municipality, Rupandehi for Digital House Numbering.

- **Remote Mapper**   May 2021
  14-Day Monsoon Challenge – Youth Innovation Lab.

LEADERSHIP/VOLUNTEERING EXPERIENCE

- **Trainer on Climate Change Adaptation Training to MSMEs ((Kawasoti, Devchuli, Gaidakot) Municipality)**
  Conducted 2 days of training for medium and small-scale industry owners in 3 different municipalities of Nawalparasi district about using different resilience products to adapt to climate change under USAID and ICAS's guidance.

- **RUPANDEHI ENGINEERING STUDENT'S SOCIETY**
  President (2021 – Aug 2022)- Worked as president during which Engineering quiz, Cricket competition and Charity Program were conducted. Served as a guiding platform for engineering students to enhance their technical skills and foster self-motivation.

- **Geomatics Engineering Students' Association of Nepal (GESAN) GEO VOL-V**
  CO-ORDINATOR- Worked as an event coordinator for the publication of a book featuring articles, ideas, and acknowledgements from Geomatics graduate students. As a pre-event initiative, we conducted various skill development programs, including training on OSM, Google Earth Engine, Web-GIS, and sports activities.

- **YouthMappers:** Member (Since 2019)

- **Trainer (15+Trainings)**
  - Conducted 2 days of GIS training and method of planning their city for Land use planning for Diktel Municipality
  - GIS mapping and Remote sensing training at Phutung Shree Secondary School (CTEVT)
  - Contributed as a trainer for 3 days of GIS training conducted by GESAN.
  - 2 Days OSM Training at IAAS, Paklihawa Campus and College of Natural Resource Management, Tikapur **(CNRM)**
    Provided training to students from agricultural backgrounds on using OSM Tracker for field data collection and JOSM for adding the collected data to OpenStreetMap (OSM).
  - 2 Days training on "Introduction to OSM and Field Mapping" at Pashchimancal campus, Pokhara.

- **Vector 2.0**
  - Volunteered organized by Free Student's Union, Pashchimanchal Campus. 2020

- **Digital Volunteer**
  - Kathmandu Living Labs (Mapping - The Unmapped Initiative).
  - Youth Innovation Lab (14-Day OSM Challenge).
  - Mapping Chepang Community.

TECHNICAL SKILLS

- Remote Sensing (Satellite Imagery Analysis including classification, trend analysis, Forecasting, change detection, and feature extraction)
- Spatial Analysis with GIS Software (ArcGIS (Desktop and Pro), QGIS, Google Earth Engine, ArcGIS Online, IDRISI Selva)
- Cartography (Mapmaking using Arc Map, Arc Map Pro, Python)
- Spatial programming and Machine Learning (Data Modelling using R-studio, Python, Geospatial visualization, HTML, JavaScript)
- Proficient in Open Street Mapping (OSM+JOSM)
- Proficient in research skills, including conducting thorough literature reviews, developing research methodologies, producing technical reports, and delivering effective presentations.
- Others (Drone Piloting, Public Speaking, and Leadership, MS Office)

REFERENCES

Dr. Tri Dev Acharya (Research Mentor)	Ass. Prof Er. Netra Bahadur Katuwal (Undergraduate Supervisor)	Ass. Prof Er. Umesh Bhurtyal (Research Mentor)
- Postdoctoral Researcher - Institute of Transportation Studies, - University of California Davis, - Davis, California 95616, USA tdacharya@ucdavis.edu (Tri Dev Acharya - Google Scholar)	- Assistant Professor - Department of Geomatics, - IOE Pashchimanchal Campus - Tribhuvan University, Pokhara. netra@ioepas.edu.np (Netra Katwal- Google Scholar)	- Head of Department - Department of Geomatics, - IOE Pashchimanchal Campus - Tribhuvan University, Pokhara umbhurtyal@wrc.edu.np (Researchgate/Umesh-Bhurtyal)