RABINA TWAYANA

MSc Student
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PROFESSIONAL SUMMARY

Certified geomatics engineer with four years of professional experience in research and geospatial programming, specializing in webGIS application development. Currently pursuing copernicus master's in digital earth specializing in geodata science at Paris Lodron University Salzburg, Austria. Passionate about leveraging the potential of emerging geospatial technologies including geoAI, digital twin, and geospatial programming to address challenges in disaster management.

EDUCATION

Copernicus Master in Digital Earth   **Oct 2024 - Present**
Paris Lodron University Salzburg, Austria
Specialization: GeoData Science
Southern Brittany University, France

Bachelor's of Engineering in Geomatics   **2016 - 2020**
Kathmandu University, Dhulikhel, Nepal
Grade: 3.86 CGPA out of 4 (Distinction)
Thesis: Land Cover Change Analysis and its Future Prediction: A Case Study of Banepa and Dhulikhel Municipalities

PROFESSIONAL EXPERIENCE

Research Associate   **Nov 2022 - Sept 2024**
Geoinformatics Center, Asian Institute of Technology, Thailand
Project:

- Development of RiskChanges Platform, under Deliverable 4.1 (The web-based simulation and information service for multi-hazard impact chains), PARATUS Project, funded by European Union's Horizon Europe research and innovation programme

Major Responsibilities:
Overseeing client-side, server-side, and deployment of the project into the server that includes:
- Brainstorming, designing and implementing new feature into the application
- Server management in Google Cloud
- Testing and fixing bugs in existing components of application
- Writing technical documentation related to application
- Contributing capacity building and training program

Full stack/WebGIS Developer   **Dec 2020 - Oct 2022**
Naxa Pvt. Ltd., Kathmandu, Nepal
Projects:
- Re-design and development of Clean-up Nepal and mobile application [link]
- USAFIRI: An open-source, web-GIS based participatory mapping toolkit to aid evidence-based decision making [link]
- Development of Changunarayan Municipality Metric Addressing System
- Provincial Climate Change Management Information System (PCCMIS) [link]
- Design and development of a web-based application for Geodetic Division, Survey Department of Nepal

- Development of Open Data Portal for Changunarayan Municipality[link]
- Blue Infrastructure Mapping of Kathmandu Metropolitan City

Responsibilities:
- Participate in the overall application development lifecycle
- Develop the server-side logic as well as the development and maintenance of the central database ensuring high responsiveness and performance to requests from the frontend
- Engage in the development of high-quality frontend applications
- Implement security measures in the developed software systems
- Use proper version control tools and maintain standard release workflows for software system deployment
- Carry out preliminary testing and quality assurance of the developed system before forwarding to QA team
- Coordinate with business analysts, team members and client representatives in smooth development of the systems
- Engage in knowledge sharing and co-learning among team members in the company

Geospatial Analyst   **Feb 2023 – July 2023**
Airlift Company, Kathmandu, Nepal
Projects:
- *Galli Maps Mobile Application Development*
  Prepared geospatial data such as buildings and roads required for the application

- *Bhutan Road Corridor Design*
  Processed UAV images data using Agisoft software and generated contour map

Frontend/WebGIS Developer Intern   **Jun 2020 - Aug 2020**
Naxa Pvt. Ltd., Kathmandu, Nepal

Project:
- Headquarter Mapping ("An Open Spatial Data Initiative to Locate and Map 753 Local Governments and their Ward Offices in Nepal")
Responsibilities:
- Develop the frontend (UI) using ReactJS library and interactive/dynamic map interface using Openlayers (JavaScript mapping library).

SKILLS

Geospatial Technologies: WebGIS, Remote Sensing, GIS, UAV, GNSS, GEE
Programming Language: Python
Web Development: HTML, CSS, JavaScript
Frontend Development: React, Redux
Backend Development: Django, Django REST Framework
Database Management: PostgreSQL
Geospatial Libraries: Openlayers, Leaflet, Cesium
Version Control: Git, Github
Containerization: Docker, Docker Hub
Geospatial Software: ArcGIS, QGIS, ENVI, GNSS solutions, Agisoft, Geoserver, Ecognition
Cloud Computing: Google Cloud Platform (GCP)
Operating System: Linux, Windows, Mac
Language: English, Nepali (Mother Tongue)

TRAINING AND PARTICIPALTIONS

Sustainability Expo held on 23-24 September at Asian Institute of Technology, Thailand

Planet on the Road: Bangkok, 26 September 2023 at Bangkok, Thailand

Enhancing Inclusive Local Disaster Reduction Strategies Using Disability Inclusion Score Index, Online, 11 October 2023

VISESS Summer School in Risk and Resilience of 6 ECTS held on 10-14 July 2023 at University of Vienna, Austria

ASEAN Training on ICT for Climate Resilient Development, organized by APCICT, ESCAP held on 15-17 May 2023 Bangkok, Thailand

Dynamic Multi-Hazard Risk Assessment for Risk Reduction Planning, held on 10-15 Dec 2022 at Geoinformatics Center, Asian Institute of Technology, Thailand

Training on ArcGIS Desktop Software, held from 13-28 May 2018, organized by Geomatics Engineering Society, Kathmandu University, Dhulikhel, Nepal

VOLUNTEERING EXPERIENCE

Facilitator in Flood Risk Assessment Training for Bhutan's National Center for Hydrology and Meteorology, held from 21st Aug to 1st Sept 2023 at Geoinformatics Center, Asian Institute of Technology, Thailand

Editorial Board Member, Annual Geo-ITC Journal of Geomatics Engineering Society (ISSN 2091-198), Kathmandu University, Nepal

Organizing Committee Member, World GIS Day-2018, Kathmandu University, Nepal

HONOURS AND AWARDS

Erasmus Mundus Scholarship, 2024
Awarded full scholarship for joint master's program, Copernicus Master in Digital Earth at Paris Lodron University Salzburg, Austria and specialization in GeoData Science at Southern Brittany University, France

Nepal Institute of Chartered Surveyors (NICS), 2021
For securing second most position in Bachelor of Geomatics Engineering degree examination conducted by all Universities of Nepal

Kathmandu University
Waved 100% tuition fee in four semesters during undergraduate study for scoring highest GPA in respective semester

Land Management Training Centre (LMTC), Government of Nepal, 2016
Waved 35 % of tuition fee by LMTC for four years undergraduate course (BE in Geomatics) at Kathmandu University, Nepal.

Private and Boarding School's Organization Nepal (PABSON), District Executive Committee, Kavrepalanchowk, 2014
For securing distinction division with 86.38% marks in the SLC Exam

Nepal Student Union, District Executive Committee, Kavrepalanchowk, 2014

For securing highest position within school in SLC Exam

All Nepal National Free Students' Union (ANNFSU), Kavre District Committee, 2014
For securing highest position within school in SLC Exam

JOURNAL PUBLICATIONS

Twayana, R.; Bhandari, S.; Shrestha, R.; Sharma, K. (2021). *Analyzing Urban Growth Pattern and Driving Factors Using Remote Sensing and GIS: A Case Study of Banepa Municipality, Nepal,* Journal on Geoinformatics, Nepal, Vol. 20, No. 1 [link]

Shrestha, R.; Bhandari, S.; **Twayana, R.,** (2021), *Monitoring Land Cover/Land Use Change Using Remote Sensing and GIS Technique at Dhulikhel and Banepa Municipality, Nepal*, International Research Journal of Modernization in Engineering Technology and Science, Volume 03, Issue 05, Impact Factor- 5.354 [link]

Twayana, R.; Bhandari, S.; (2019), *Problems and its Possible Solutions for Conversion of 2D Cadastre to 3D Cadastre in Context of Nepal*, Geospace-Annual Geo ICT Magazine of GES, Vol. V, Page number 26 [link]

CONFERENCE PROCEEDING AND PRESENTATION

Presentation on *RiskChanges: A WebGIS Application for Multi-Hazard Quantitative Risk Assessment*, 3rd International Symposium on Disaster Resilience and Sustainable Development 2023, held on 7-8 Dec 2023, Asian Institute of Technology, Thailand

Bhandari, S.; Twayana, R.; Shrestha, R.; Sharma, K. (2021). *Future Land Use Land Cover Scenario Simulation Using Open-Source GIS for the City of Banepa and Dhulikhel Municipality, Nepal*, FOSS4G Asia 2021

ACADEMIC BLOG

An Open-Source Tool to Assist in Multi-Hazard Risk Assessment, published on 17 October 2023 in PreventionWeb [link]

PROFESSIONAL MEMBERSHIP

Women in Geospatial Mentorship Programme
     Membership Type: Mentee

International Society of Photogrammetry and Remote Sensing (ISPRS)
     Membership Type: Individual

International Student Nepal Engineering Council (NEC)
     Membership Type: Geomatics 'A' Category
     Membership Number: 439

Nepal Geomatics Engineering Society (GES) Member
     Membership Type: General