ROHIT KHATI

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Vannes, Brittany – 56000, France

OBJECTIVE

Data Scientist focused on deep learning and spatial analysis, using Python to extract insights from complex datasets and solve real-world problems.

EXPERIENCE

- **National Institute for Space Research (INPE) [🌐]** *Jul 2024 - Sep 2024*
  Research Intern São José dos Campos, Brazil (Remote)
  - Analyzed Sentinel-2A satellite image time series using Segment Anything Model (SAM), Simple Linear Iterative Clustering (SLIC), and Simple Non-Iterative Clustering (SNIC) segmentation techniques.
  - Applied AI-driven methods in Python, R, QGIS, sam-geo, and GEE using the SITS package for geospatial segmentation and classification.
- **EO Analytics [🌐]** *Mar 2024 – Jul 2024*
  Research Assistant Salzburg, Austria
  - Integrated Sematique package with Google Earth Engine Python API, streamlining semantic querying for Earth Observation data cubes.
  - Developed geospatial analysis workflows in Python, enhancing environmental insights for land change studies.
  - Collaborated with cross-disciplinary teams to advance capabilities in large-scale geospatial data processing.
- **GLODAL-Inc [🌐]** *Oct 2020 – Aug 2023*
  Research Assistant Kanagawa, Japan
  - Modeled riverbank erosion using historical satellite imagery and AI-based analysis.
  - Led ML projects on tree type estimation, urban growth modeling, and NO_2 anomaly detection (Typhoon Hagibis).
  - Automated geospatial workflows using Python and GEE; developed graphical modelers for complex tasks.
  - Designed a platform for visualizing destruction in conflict zones.
  - Completed projects in AI-based land cover classification, building detection, and oil palm mapping.
- **OMDENA [🌐]** *Sep 2022 – Dec 2022*
  Machine Learning Engineer Remote
  - Developed open-source AI-assisted mapping tools for disaster management in live user environments.
  - Led georeferencing and rasterizing efforts, streamlining data preprocessing for large-scale geospatial datasets.
  - Collaborated with global teams to train AI models in a live environment, enhancing disaster response capabilities.
- **GeoInformatics Center [🌐]** *Oct 2019 – Jan 2020*
  Intern Khlong Luang, Thailand
  - Conducted geospatial analysis of marine plastic litter and developed deep learning models for land cover classification.

EDUCATION

- **Paris Lodron Universität Salzburg & Université Bretagne Sud** *Sep 2023 – Present*
  Copernicus Master in Digital Earth with Geodata Science Specialization (Dual Degree) Salzburg, Austria & Vannes, France
  - Thesis: Deforestation Monitoring Using Deep Learning on Multi-modal Satellite Image Time Series
- **Western Region (Pashchimanchal) Campus, Tribhuvan University** *2015 – 2019*
  Bachelor's Degree in Geomatics Engineering Pokhara, Nepal
  - Final grade: Distinction

PROJECTS

- **LandCoverMapGen: Automated Land Cover Map Generation System** *Nov 2021*
  Tools: Python, TensorFlow, ResNet, Google Earth Engine, Google Cloud, Jupyter Notebook [🐙]
  - Built a deep learning pipeline for land cover mapping using ResNet on satellite imagery.
  - Automated data filtering and index generation via Google Earth Engine.
  - Designed user-friendly configuration and output system with minimal manual input.
- **Forest Type and Density Mapping: National-Scale Forest Analysis in Nepal** *Aug 2022*
  Tools: PyTorch, ResNet, Google Earth Engine, GDAL, AWS S3 [🐙]
  - Mapped forest cover across Nepal using Landsat imagery and GEE.
  - Classified forests into conifer and broadleaf types using ResNet in PyTorch.
  - Estimated forest tree density using a multi-layer regression model.
  - Handled national-scale raster data using GDAL and stored outputs in AWS S3 buckets.

Publications

C=Conference

[C.1] Tran, D. T., Miyazaki, H., Khati, R., Neupane, M., Yuasa, T., and Suzuki, T. (2023). **Machine-Learning-Based Riverbank Erosion Prediction Using River Channel Observations from Historical Satellite Data**. In *Proc. ACRS 2023, RS-11 Hydrology*, Paper No. ACRS2023384.

[C.2] Neupane, M., Jaiswal, R., Khati, R., Dhakal, S., and Sharma, S. (2019). **E-CAD: Web-Based Information Service for Land Management**. *Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.*, XLII-5/W3, pp. 65–69. DOI: 10.5194/isprs-archives-XLII-5-W3-65-2019

Skills

- **Programming & Database:** Python, R, SQL, PostgreSQL
- **Data Science & Machine Learning:** TensorFlow, PyTorch, Scikit-learn, Keras
- **Cloud Technologies:** Google Earth Engine, AWS S3, AWS EC2, Google Cloud Platform
- **DevOps & Version Control:** Git, GitHub, Conda, Docker
- **Specialized Area:** Remote Sensing, Earth Observation, Geospatial AI, Land Cover Classification, Forest Mapping, Time Series Analysis
- **Other Tools & Technologies:** QGIS, ArcGIS, SNAP, ENVI, GeoServer, eCognition, GDAL, OGR, Trimble GNSS

Honors and Awards

- **Winner – ML4Earth: Foundation Models for EO Hackathon** *Sep 2024*
  TUM Data Science in Earth Observation [🌐]
  ◦ Won 1st place in a global hackathon focused on applying foundation models to Earth observation problems.
  ◦ Collaborated with international participants to develop a novel solution in remote sensing AI.
- **Eiffel Excellence Scholarship** *2023*
  Campus France / French Ministry for Europe and Foreign Affairs
  ◦ Awarded prestigious scholarship to pursue a dual-degree in Copernicus Master's in Digital Earth.
  ◦ Hosted at Université Bretagne Sud (France) and Paris Lodron Universität Salzburg (Austria).
- **Winner – COVID-19 Mapathon** *Sep 2020*
  Nepal Geomatics Engineering Society
  ◦ Won first place in a national mapathon aimed at leveraging geo-informatics for pandemic response.
  ◦ Mapped health infrastructure and COVID-19 hotspots using open geospatial data.
- **Outstanding Regular Student Award** *2015–2019*
  Tribhuvan University
  ◦ Received distinction in all 8 semesters for academic excellence.
  ◦ Recognized among top-performing students in the Geomatics Engineering program.
- **Topper – Geomatics Engineering Entrance Exam** *2015 - 2019*
  Tribhuvan University
  ◦ Ranked first in the nationwide entrance examination for the Geomatics Engineering program.

Volunteer Experience

- **GISCorps Volunteer – HOT COVID-19 Mission** *Jul 2020 – Sep 2020*
  URISA GISCorps / Humanitarian OpenStreetMap Team (HOT) [🌐]
  ◦ Contributed to emergency mapping tasks during the COVID-19 pandemic and Ebola campaign.
  ◦ Digitized infrastructure and populated areas in vulnerable regions to support disaster response and sustainable development.
  ◦ Applied geospatial editing tools (e.g., JOSM, ID Editor) and OpenStreetMap during global lockdowns.

Professional Memberships

- **Nepal Engineering Council (NEC)**, Membership ID: 411 *Aug 2020 – Present*
- **Nepal Geomatics Engineering Society** *Aug 2022 – Present*

Summer Schools

- **AI4AGRI Summer School** *May 8 – 14, 2024*
  Focus: AI applications in Agriculture, Remote Sensing, and Data Science
- **High Performance and Disruptive Computing in Remote Sensing (HDCRS)** *Jun 3 – 7, 2023*
  Focus: HPC, cloud and quantum computing, parallel programming, and specialized hardware for remote sensing