

# Hem Raj Pandey

Fullstack GIS developer/Remote Sensing Specialist

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Experienced GIS developer specializing in Python Django and React for web applications. Skilled in remote sensing, digital image processing, and using tools like Sentinel Hub for satellite imagery analysis. Proficient with geospatial Python libraries and cloud platforms like AWS and Google Cloud.

## EXPERIENCE

### Associate GIS Engineer

India

*sensegrass*

Jun, 2024 - Present

- Engaged in GIS development and Remote Sensing within the agricultural domain.
- <https://www.sensegrass.com/>

### Full stack web GIS developer/Freelancer

New Delhi, Delhi

*Global Coordinate*

Feb, 2024 - Present

- Designed and developed a dynamic dashboard for the eTOD geoportal utilizing React and MapLibre
  - Implemented user authentication via RESTful APIs using django rest framework
  - Deployed on AWS Cloud with CICD integration using Jenkins.
- <https://www.prithvipraroop.net/>

### Full Stack web GIS Developer/Freelancer

Remote

*Fiveer*

Oct, 2023 - Present

- Designed and developed a dynamic dashboard for the farm calendar utilizing React and MapLibre
  - Developed and deployed the GeoDjango backend RESTful API for the Farm Calendar app on Google Cloud Platform (GCP), ensuring scalability and reliability.
- <http://surl.li/rzbdz>

### Full stack web GIS developer/part time

Lalitpur

*Mappers Nepal PVT LTD*

May, 2023 - May, 2024

- Developed the company site for Mappers Nepal
  - Developed Sudurpashchim Province dashboard with GIS-based info visualization
  - Deployed the applications
- <https://mappersnepal.com.np/>
- <https://suderpashchim-school-infowebmap.vercel.app/>

### Vice President

Pokhara

*Geomatics Engineering Students' Association of Nepal (GESAN)*

Jul, 2022 - Jul, 2023

- Directed association activities and initiatives in the capacity of Vice President
- <http://www.ioegesan.org/>

## EDUCATION

### Bachelor in Geomatics Engineering

Pokhara

*IOE Pashchimanchal Campus*

Aug, 2019 - May, 2024

### High School Degree

Mahendranagar

*Shree Mahendranagar Secondary School*

May, 2017 - Apr, 2019

## PROJECTS

## **A Web GIS Based Water Distribution Network Management System Using GIS and Remote Sensing (Bachelor's final year research project)**

- Pipeline Route Analysis: Optimize pipeline installation routes with elevation analysis
- Issue Reporting: Users can report problems and request installations, with automatic pipeline identification
- Task Manager: Monitor and assign tasks for efficient pipeline management

Our web GIS app offers two distinct views:

- Consumer view: Enables users to report issues such as leaks and request installations
- Administrator view: Accessible after login, facilitates GIS-related tasks (Pipeline Route Analysis and Task Management) for efficient management

<https://shorturl.at/klxP0>

## **Electronic Terrain and Obstacle Data (eTOD) Geoportal**

- The eTOD portal offers access to various electronic terrain and obstacle datasets for different aerodromes

<https://www.prithvipraroop.net/>

## **Web GIS based dashboard for Sudurpashchim Province: Ongoing project**

- Enables users to explore aggregate number of educational institutions in Sudurpashchim Province
- Allows filtering based on smaller administrative boundaries like municipalities and wards.
- Clicking on a school marker provides access to comprehensive infographics of the selected school.

<https://suderpashchim-school-infowebmap.vercel.app/>

## **FarmCalendar Web GIS app**

- Empowers users to query farming regions, soil types, and crop calendars based on coordinates selected from the map interface.
- Facilitates seamless data expansion across countries through user-friendly data upload functionality in the GeoDjango administration interface

<http://surl.li/rzbdz>

## **Mappers Nepal website**

- Led the creation of a dynamic company website, featuring Home, Team, Portfolio, About Us, Events, Blogs, and Contact sections for improved user interaction and accessibility.

<https://mappersnepal.com.np/>

## **Farmero web application**

- Developed a location-based web application connecting farmers and buyers, streamlining agricultural product transactions
- Implemented real-time tracking capabilities using Django channels and websockets for enhanced functionality.

<https://youtu.be/Hc8aMj7oDQg>

## **Flood Early Warning System (RPD Project)**

- Engaged in the IoT project for the Rapid Prototype Development Challenge 2022, utilizing the Sony Spresense microprocessor and QZSS satellite positioning technology.
- Developed a web application providing real-time flood information via a web GIS interface, employing geospatial analysis to track users' locations and suggest safe zones in flood-affected areas.

<https://youtu.be/K75A3X-LM0E>

## **Tourism web application**

- Modeled after popular ride-sharing platforms like Indrive and Pathoo, the web application enables passengers to create and submit travel plans and send ride requests to available drivers
- Implemented Django channels and websockets to enable real-time ride tracking and handle asynchronous ride requests, ensuring a seamless user experience.

[https://github.com/HEM2058/Tourismo\\_webapp](https://github.com/HEM2058/Tourismo_webapp)

## **Digital map for district**

- Empowers administrators to upload municipality shape files, utilizing Geoserver for rendering WMS and WFS layers
- Users can visualize uploaded data on an OpenLayers map and request assistance by submitting their details and locations through a relief request option.

[https://github.com/HEM2058/Digital\\_map\\_Bajhang\\_Backend/](https://github.com/HEM2058/Digital_map_Bajhang_Backend/)

## **Resource mapping portal**

- Allows users to upload shape files and CSV data containing coordinates for resources like schools, temples, and hospitals
- Visualizes all data on a map with features including search, filtering, and navigation to specific locations using Leaflet plugins and a routing machine.

[https://github.com/HEM2058/resource\\_mapping](https://github.com/HEM2058/resource_mapping)

### Doctor Finder web application

- Facilitates doctor registration, displaying their information on a map for easy access.
- Users can navigate to registered doctors and contact them directly as required. Watch our video tutorial for a comprehensive demonstration.

<https://youtu.be/fBX9JlbWeNE>

## TRAINING/CERTIFICATIONS

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### Spatial Data Science: The New Frontier in Analytics

2023

*Esri*

<https://www.esri.com/training/TrainingRecord/Certificate/hemrajpandeyd/64c8b3368a98b258b4d64496/-345>

### Python for Everyone

2023

*Esri*

<https://www.esri.com/training/TrainingRecord/Certificate/hemrajpandeyd/64c8a7a08a98b258b4d5db49/-345>

### Introduction to Open Source Web GIS Programming

2022

*Udemy*

<https://www.udemy.com/certificate/UC-cec273cb-d0c8-4422-a884-b9bbddd6f056/>

### Web Mapping and Web-GIS from Dev to Deployment: GeoDjango

2022

*Udemy*

<https://www.udemy.com/certificate/UC-43e9827f-a7ea-44bf-b49a-f875822678c6/>

## SKILLS

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Python, Django (GeoDjango), Django Rest Framework, React, LeafletJS, openlayers, MapLibre, PostgreSQL/Postgis, Git/GitHub, Javascript, HTML, CSS, geoServer, geonode, OSM tools/apis, AWS CLoud, Google Cloud Platform, Digital Ocean, ArcGIS/ArcGIS pro, SQL, Docker, D3.js, Photogrammetry, Qgis, NetworkX, geopandas, Rasterio, GDAL, Shapely, Adobe Photoshop, Adobe InDesign, Adobe Illustrator, Google Earth Engine, Google Earth Pro, ENVI, Satellite Image Processing, Cartography, sentinelhub, Excel, PowerPoint, CICD, GRASS GIS, Websocket, GNSS

## LANGUAGE

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Nepali, English, Hindi