Module 3.2a

A

Research Proposal

Of

Technology and Standards for Geospatial Workflows

Submitted for

Master of Technology

In

Remote Sensing & GIS

At

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**Indian Institute of Remote Sensing**

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**Project Proposal: Geospatial Workflow**

1. **Idea/ Concept**. To create a work flow process to create a database to store photographs related to natural disasters (including landslides) in a particular area (District).
2. **Background**. Uttarakhand disaster management website to be used as reference to extract data related to Natural Disasters including the landslides. The dataset available on the website contains statistical data without details of geographical location or any photographic evidence to identify the severity of the landslide and its consequences.
3. **Aim of the Proposal**. The aim of the project is to automate the dataset related to landslides.
4. **Data sources**. The sources of data are as enumerated below: -
5. By creating a portal on which users can post original Google Photos with date and time stamp. The date and time stamp can be further be extracted to create a Geospatial Database with exact Geo-location and photographic evidence for future reference.
6. The second source of dataset to be obtained from Crowd Sourcing (Social Media Handles). The post containing keywords like Hashtags (**#**chamoli landslides, **#**landslides Dehradun etc.) which have been posted on Social Media Handles (Facebook or Twitter) can be identified and then required data can be extracted to compile the metadata from the photos to create the database.
7. **Methodology**. Create a workflow containing the following processes.
8. The data will be extracted from two data sources i.e. Web Portal and Geosocial Media.
9. In the case of web portal, the geo locations of landslides will be extracted from the Uttarakhand Disaster Management web portal from the available imagery using the Python language. Post extraction of the data, it will be cleaned and sorting will be carried out.
10. In the case of Geosocial Media, the data will be extracted from the social media handles including Twitter and Instagram using the Python language. Post extraction the data will be cleaned and sorting will be carried out.
11. On the basis of extracted data from two sources, the database will be created and visualized. The data can be visualized in various forms using plots, charts etc.
12. **Future Prospects.** The above workflow concept will augment the existing portals with dataset collected from crowdsourcing. This augmentation of open-source data set from government portals and from crowdsourcing will increase the information content and will provide historic gap filling in terms of database.