

First Deliverable

Specification Feasibility

Specification feasibility assesses whether the project can meet its technical and performance specifications based on available resources and technologies. The key factors include in case of remote sensing debris-covered glaciers is;

Data Sources, Spatial and Temporal Resolution, Hardware and Software, Budget Constraints and Data Transmission.

Specification

- Evaluate the availability of relevant remote sensing data sources
- The type of debris to be detected and mapped
- The spatial resolution and accuracy required
- The temporal resolution required
- The cost and logistical constraints

Information Feasibility

Information feasibility refers to the availability of the data and resources needed to meet the requirements of a system or project. Information feasibility focuses on whether the remote sensing project can provide meaningful, accurate, and actionable information. For mapping debris-covered glaciers, the following aspects are consider;

Data Quality, Relevance to Objectives, Data Fusion and Integration, Data Fusion and Integration, Data Accessibility, Environmental Factors and Data Updating.

Information

- Remote sensing data of the study area
- Software for processing and analyzing remote sensing data
- Trained personnel to interpret the remote sensing data

Vision Document

Project: Remote Sensing of Debris-Covered Glacier

1. Vision

Our vision is to develop a remote sensing system for detecting and mapping debris-covered glaciers. This system will provide valuable information for disaster risk management, water resource management, and climate change adaptation.

2. Success criteria

The success of this project will be determined by:

- The accuracy and reliability of glacier mapping and change detection.
- User satisfaction with the accessibility and usability of the information.
- The project's impact on research, policy decisions, and public awareness regarding debris-covered glaciers and climate change.

3. Benefits

Our system will provide a number of benefits, including:

- Improved disaster risk management: Our system will help to identify and assess the risks posed by debris-covered glaciers. This information can be used to develop early warning systems and evacuation plans.
- Improved water resource management: Our system will help to monitor the volume and distribution of debris-covered glaciers. This information can be used to manage water resources more effectively.
- Improved climate change adaptation: Our system will help to track the impact of climate change on debris-covered glaciers. This information can be used to develop adaptation strategies to reduce the risks posed by debris-covered glaciers.

4. Scope

- Remote sensing data acquisition and processing.
- Machine learning algorithms for image analysis and classification.
- Web and mobile application development for data visualization.
- Data storage, management, and accessibility.
- Ground validation and accuracy assessment.

5. Target Audience

- Climate scientists and researchers.
- Government agencies responsible for disaster management.
- Environmental and conservation organizations.
- Educators, students, and the public interested in climate change.

Risk List

Technical risks:

- The remote sensing data may not be of sufficient quality to accurately detect and map debris-covered glaciers.
- The software for processing and analyzing the remote sensing data may not be reliable or accurate.
- The trained personnel may not have the necessary skills and experience to interpret the remote sensing data accurately.

Schedule risks:

- The project may not be completed on time due to unforeseen technical challenges or delays in acquiring the necessary data and resources.

Budget risks:

- The project may exceed its budget due to unexpected costs or changes in the scope of work.

Machine Learning Performance Risk:

- Machine learning models not meeting performance expectations or overfitting the data.

Stakeholder risks:

- The stakeholders may not be satisfied with the results of the project if they do not meet their expectations.
- The stakeholders may not be willing to provide the necessary resources or support for the project.

Environmental risks:

- The project may have a negative impact on the environment, such as if it requires the collection of field data in sensitive areas.

