

PLANET PULSE

THE GEOLOGICAL

SUITABILITY

ANALYSER

How AI can empower human infrastructure construction.



PREPARED BY

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THINK ABOUT IT

In recent years, we've all become increasingly aware of the tragic loss of human lives caused by poor infrastructure.

- Derna Dam Collapse
 - Libya (September 2023)
 - 4540 deaths 3297 missing
- Arbaat Dam Collapse
 - Sudan (August 2024)
 - 148 deaths 200 missing 150 injured
- Tiware Dam Breach
 - Maharashtra India (July 2019)
 - 19 deaths 7 villages flooded



CORE FEATURES

- Geological Analysis
- Climatic Analysis
- Constant improvements
- Accurate Predictions



Your input is invaluable to us, and we deeply appreciate the trust and support you extend to our work.

DATA ACCURACY



- Our data is sourced from highly credible and authoritative organizations, including the Government of Gujarat, NASA, ISRO, DAHITI, and others.
- We strive to maintain the highest standards of accuracy and reliability in all our datasets.
- We also value and incorporate user feedback to continuously refine and update our datasets.

TECH-STACK

- Frontend - React JS
 - Material UI
 - Formik with Yup Validation
 - Leaflet
 - Redux
- Backend - Python Django Rest Framework
 - Pandas
 - Numpy
 - Scikit learn
- Database - DBSQLLite
 - Default Django DB
- Code Quality
 - ESLint
 - Prettier

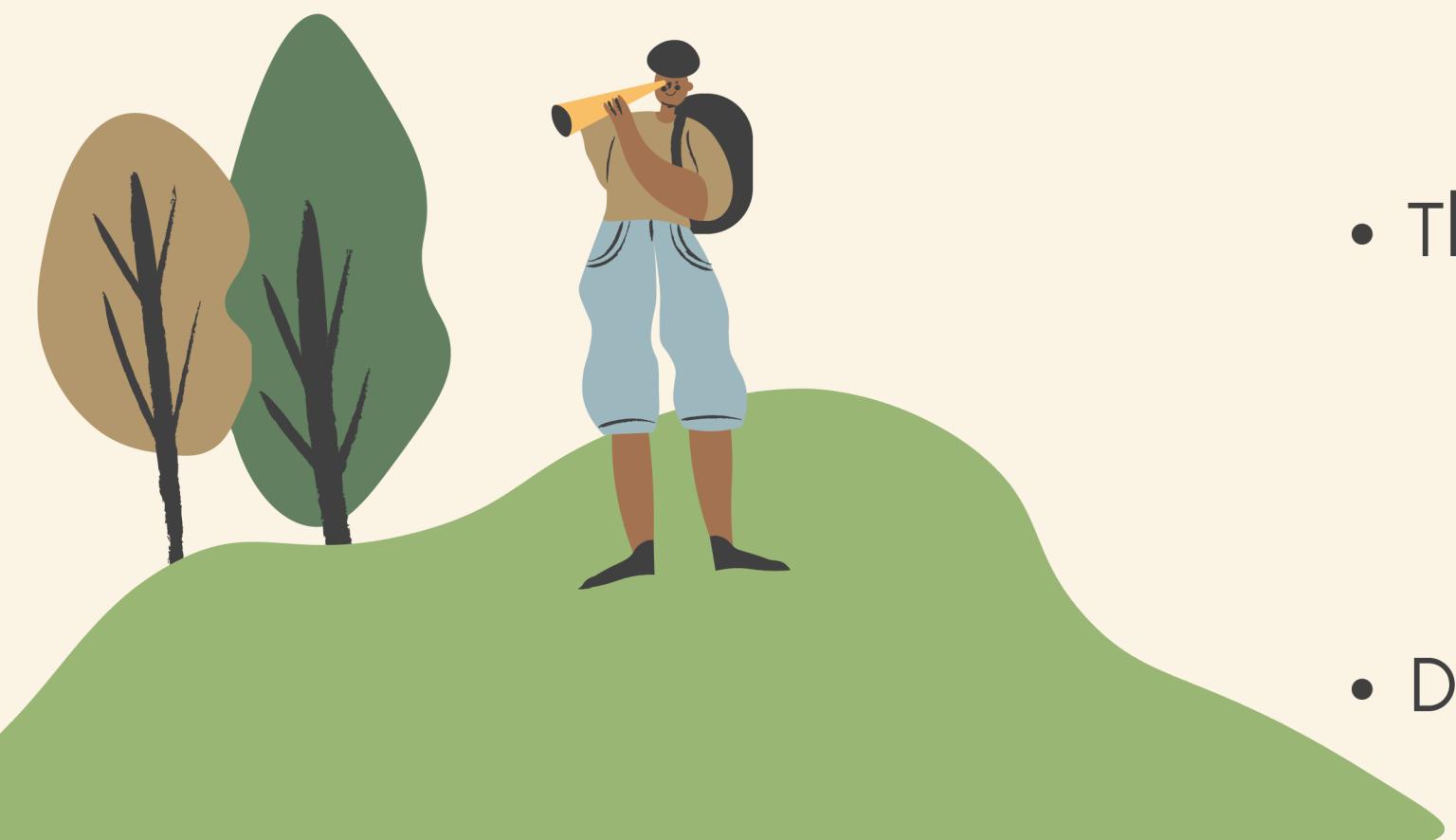


OUR ML MODELS

- Model Used – HistGradientBoostingRegressor, ExtraTreesRegressor
- Data Preprocessing- Numeric conversion, Feature Engineering, Missing value handling and others.
- Train-Test Split:
 - 80/20 split ensures the model is evaluated on unseen data for better generalization.
- Separate Models:
 - Geological Model uses spatial and structural features.
 - Climatic Model uses historical weather and environmental indicators.
- Evaluation Metrics:
 - Geological model having r2_score of 0.9194
 - Climatic model having r2_score of 0.739



FUTURESCOPES



- IoT Integration
 - Seamlessly connect with IoT devices to gather and process real-time data.
- Third-Party API Integration
 - Easily integrate with external APIs to enhance data accuracy and functionality.
- Data Import & Export
 - Effortlessly import or export your data in standard formats for smooth interoperability along with downloadable Reports with Graphs
- Location-Based Data Access
 - Retrieve data instantly using just latitude and longitude coordinates.
- Profile-Based Access Control
 - Manage permissions and customize access based on user roles and profiles.
- Historical Data Comparison
 - Store your previous records and compare them with current data for better insights.

MOTTO AND VISION

Starting with dams, let's ensure that no infrastructure ever leads to human casualties again.

The preservation of human and wildlife lives is equally as important as advancing infrastructural development, and we are committed to sustaining both in harmony.



THANK YOU

