



## Google Earth Engine

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The Google Earth Engine platform is a system designed to enable petabyte-scale, scientific analysis and visualization of geospatial datasets. Earth Engine provides a consolidated environment including a massive data catalog co-located with thousands of computers for analysis. The user-friendly front-end provides a workbench environment to allow interactive data and algorithm development and exploration and provides a convenient mechanism for scientists to share data, visualizations and analytic algorithms via URLs.

The Earth Engine data catalog contains a wide variety of popular, curated datasets, including the world's largest online collection of Landsat scenes (> 2.0M), numerous MODIS collections, and many vector-based data sets. The platform provides a uniform access mechanism to a variety of data types, independent of their bands, projection, bit-depth, resolution, etc..., facilitating easy multi-sensor analysis. Additionally, a user is able to add and curate their own data and collections.

Using a just-in-time, distributed computation model, Earth Engine can rapidly process enormous quantities of geo-spatial data. All computation is performed lazily; nothing is computed until it's required either for output or as input to another step. This model allows real-time feedback and preview during algorithm development, supporting a rapid algorithm development, test, and improvement cycle that scales seamlessly to large-scale production data processing.

Through integration with a variety of other services, Earth Engine is able to bring to bear considerable analytic and technical firepower in a transparent fashion, including: AI-based classification via integration with Google's machine learning infrastructure, publishing and distribution at Google scale through integration with the Google Maps API, Maps Engine and Google Earth, and support for in-the-field activities such as validation, ground-truthing, crowd-sourcing and citizen science through the Android Open Data Kit.