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Image Labeler: Label Earth Science Images For Machine Learning

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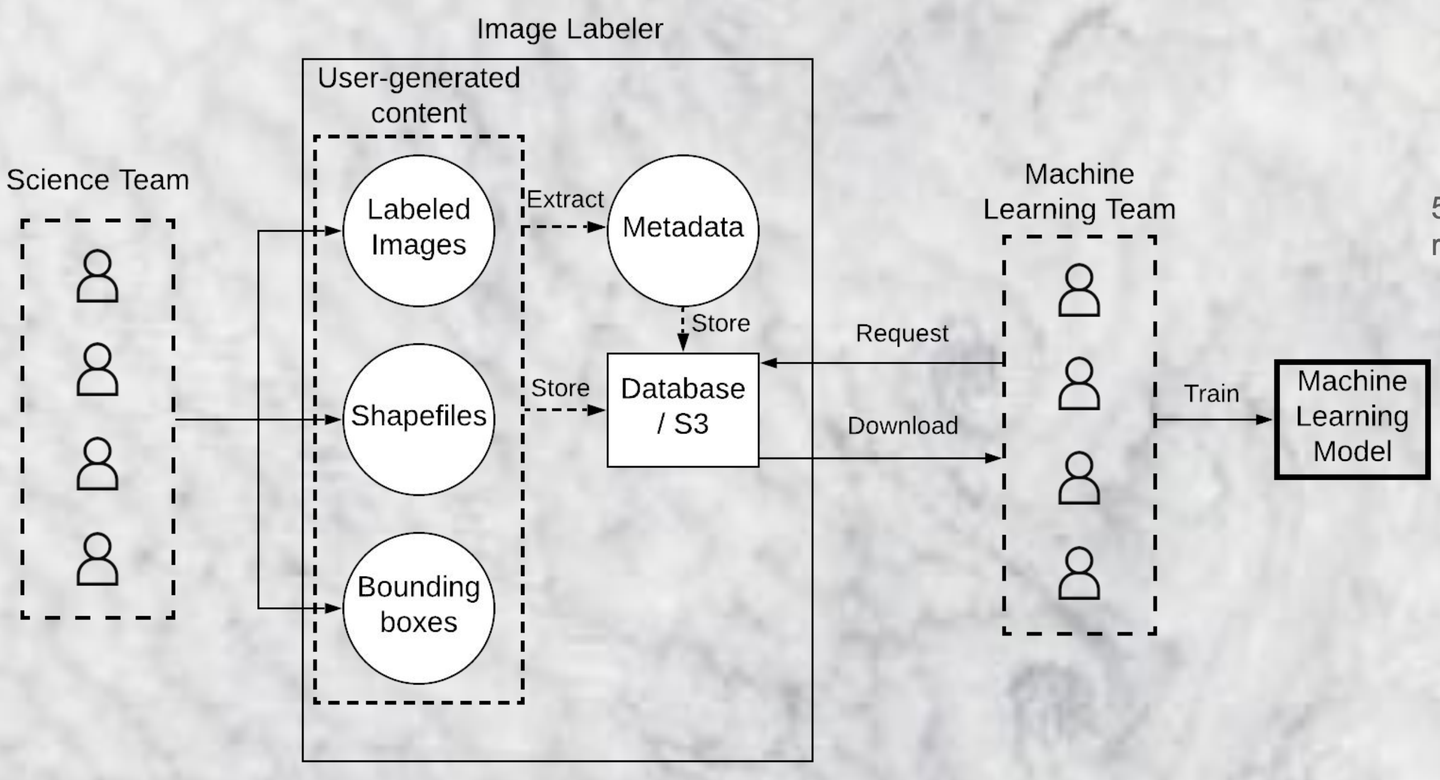
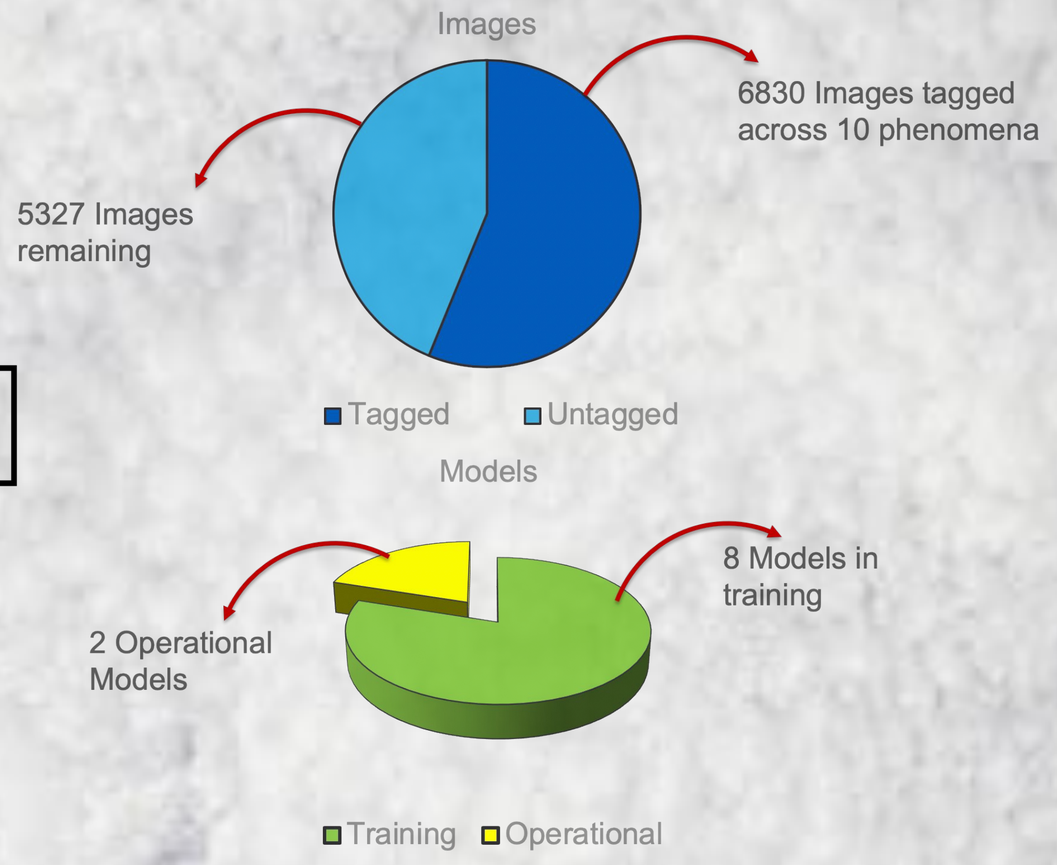
Introduction

Advances in machine learning have made it possible to automatically detect Earth science phenomena from satellite imagery. However, the models used require scientists to store and manage an abundant supply of labeled images in order to produce meaningful results. Image Labeler is a fast and scalable cloud-based tool that facilitates the rapid development of image-based earth science phenomena datasets, in order to aid automated image classification and phenomena detection.

Overview

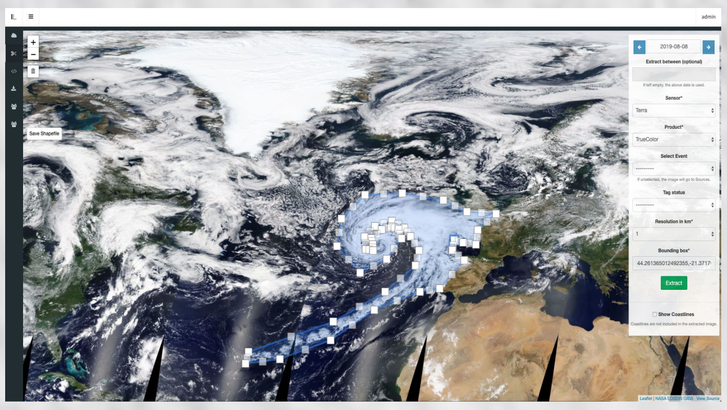


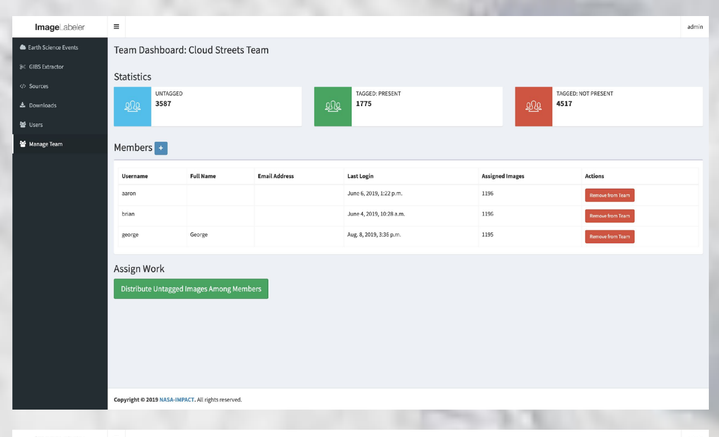
Usage Statistics

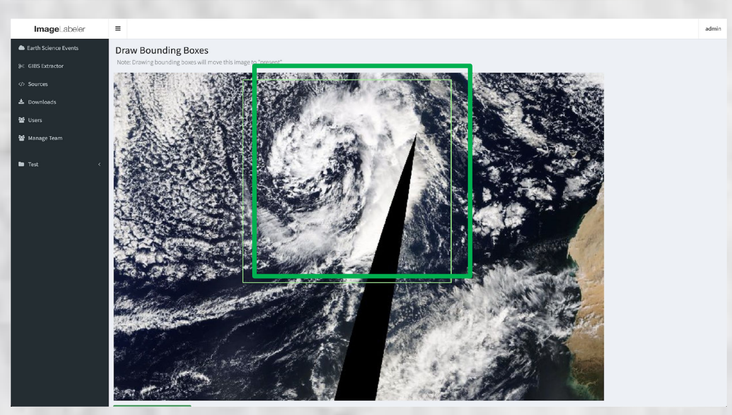


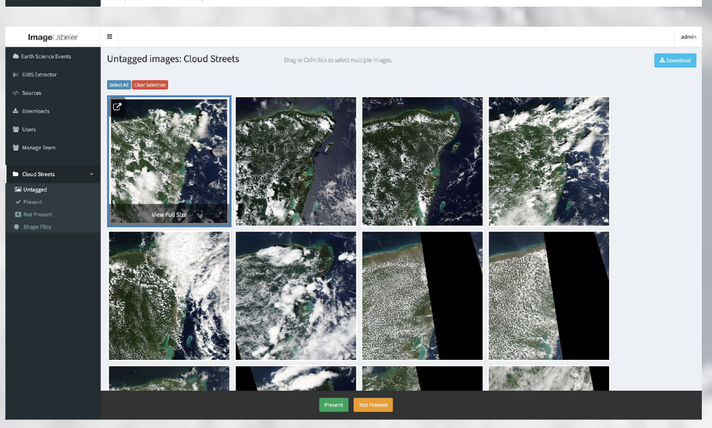
Key Features

- Annotate satellite imagery
- Shapefiles and bounding boxes
- User-friendly design
- Collaborative image labeling
- Upload tagged/untagged images
- Machine-learning-ready data









Conclusion

- Labeling, processing, managing, and storing multiple sources of data is complex
- Image Labeler facilitates the creation of labeled earth science datasets
- Datasets are managed in the cloud for better scalability, and maintainability

Future Plans

- Integrate geostationary satellite data, Landsat, Sentinel.
- Live update for collaboration
- Labeling based on metadata
- Login with Earthdata account
- Versioning of data

Acknowledgements

This work was made possible by the funding and resources provided by the NASA-IMPACT program. Satellite imagery from NASA GIBS is used within the application. The background image is an example of Von Karman Vortices, extracted using Image Labeler's GIBS extractor.

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https://labeler.nasa-impact.net/

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