



ESDIS Application (Global Rotating Utility for Visualization)



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Introduction

I interned at NASA Goddard Space Flight Center for ten weeks in the summer of 2016. One of the new initiatives in my department was to promote the distribution and use of open-sourced data to members of the science community and the general public. My project focused on a data visualization application that allows users to visualize the various types of earth data collected by the twelve Distributed Active Archive Centers (DAACs) with a focus on land processes. During my internship, not only did I learn how to develop software outside of the classroom, but I was able to learn how to utilize NASA's earth data dynamically and locally.



This is the loading screen of Global Rotating Utility for Visualization (emphasis on data collected from Land Processes DAAC).

Service Site

NASA Goddard Space Flight Center
8800 Greenbelt Rd, Greenbelt, MD 20771
Supervisor: Lindsay Francis

NASA is dedicated to paving the path for space, aeronautics, and earth science research.

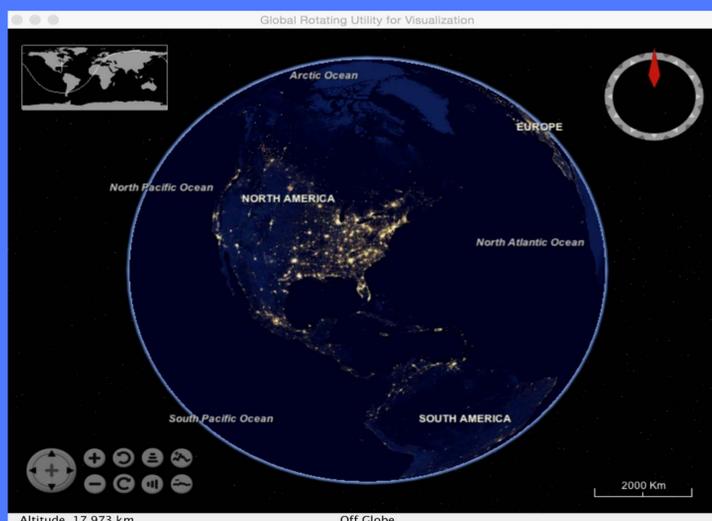
Goals of the Earth Science Data and Information System (ESDIS) Project includes collecting earth science data and developing software that promotes distribution and use of open-sourced data to users.

Issue

Terabytes of data is collected daily through the twelve DAACs. The data is essential to understanding the complex components within the Earth system, however, there is also a need to promote the idea that this data is public and can be accessed by anybody. This initiative helps foster the growth of new earth data software and heightens the general public's awareness. One way that this problem was combatted was through the Space Apps Challenge, which allows engineers to create new software utilizing this open-sourced data.

Activities

- Self-taught the basics of Git and XML, how to use BitBucket for version control (Git platform), and how to use APIs to run the backend of the program
- Debugged errors in the program
- Learned how to transfer geoTIFF files locally and access data layers dynamically through Web Map Services (WMS)
- Utilized the Space Tracks Application as well as the Worldwind Software Development Kit (SDK) to create new functionalities in GRUV
- Wrote down documentation for the source code as well as how to use the program
- Shadowed mentor and observed meetings
- Attended NASA Intern events and tours



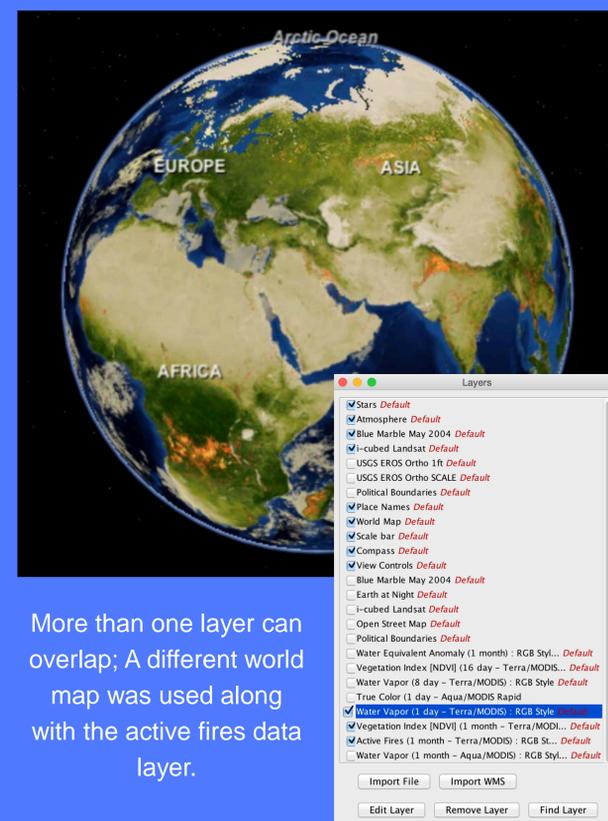
Earth at Night data layer is used in this picture.

Impact

Through this project, I was able to promote the awareness of open-sourced earth science data to the other interns as well the users who tested my software. For me, on a personal level, I was able to immerse myself in the various different earth data sets and learn more about the processes behind how NASA collects and analyzes earth science data.

Future Work

In the future, I hope that even more functionality will be added to GRUV to make it more versatile for all data types. Also, once the application is completely developed, the source code will be published online through Github, making the project open-sourced and allowing anybody with an interest in earth science data to contribute new ideas and improve upon the current software.



More than one layer can overlap; A different world map was used along with the active fires data layer.

Acknowledgments

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