

# Data Integrity and Abuse Prevention for Environmental Rescue

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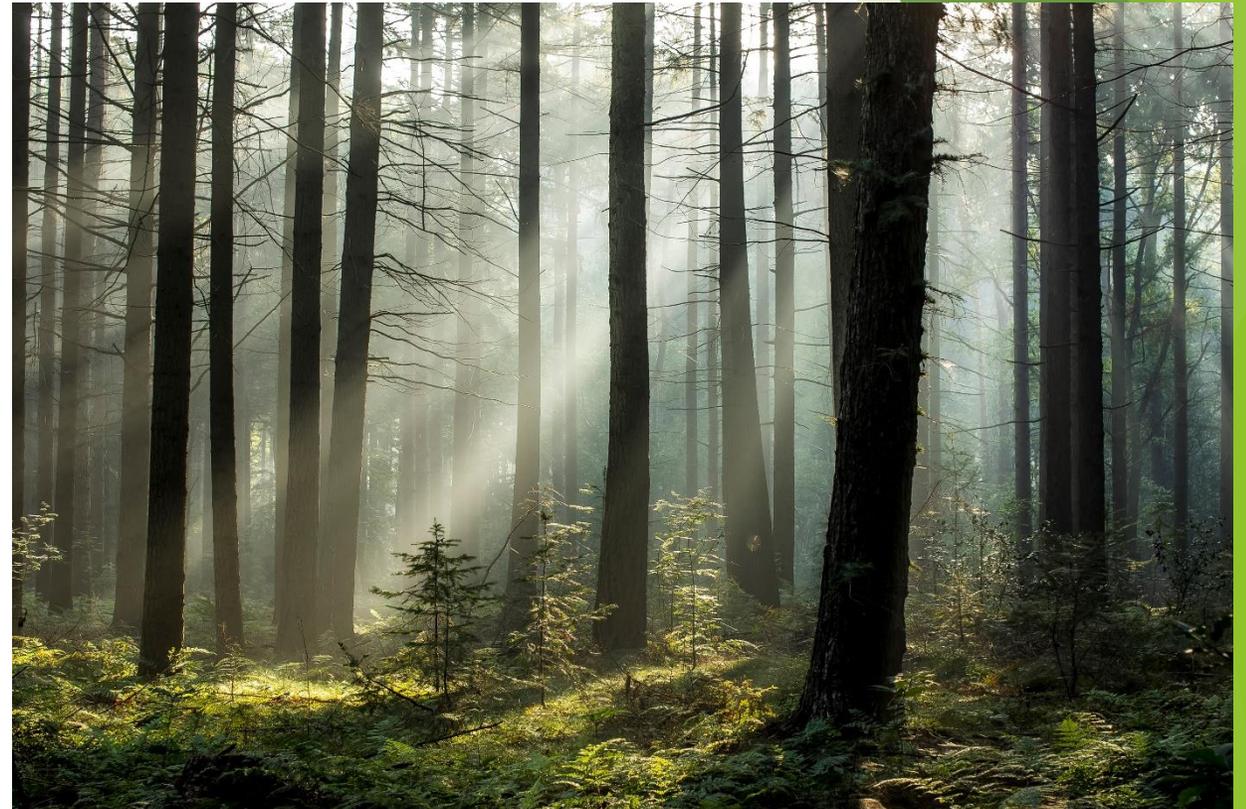
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Clients: Dr. Camille Gaillard, Dr. Duan Biggs, Dr. Jenna Keany and Dr.  
Christopher Doughty

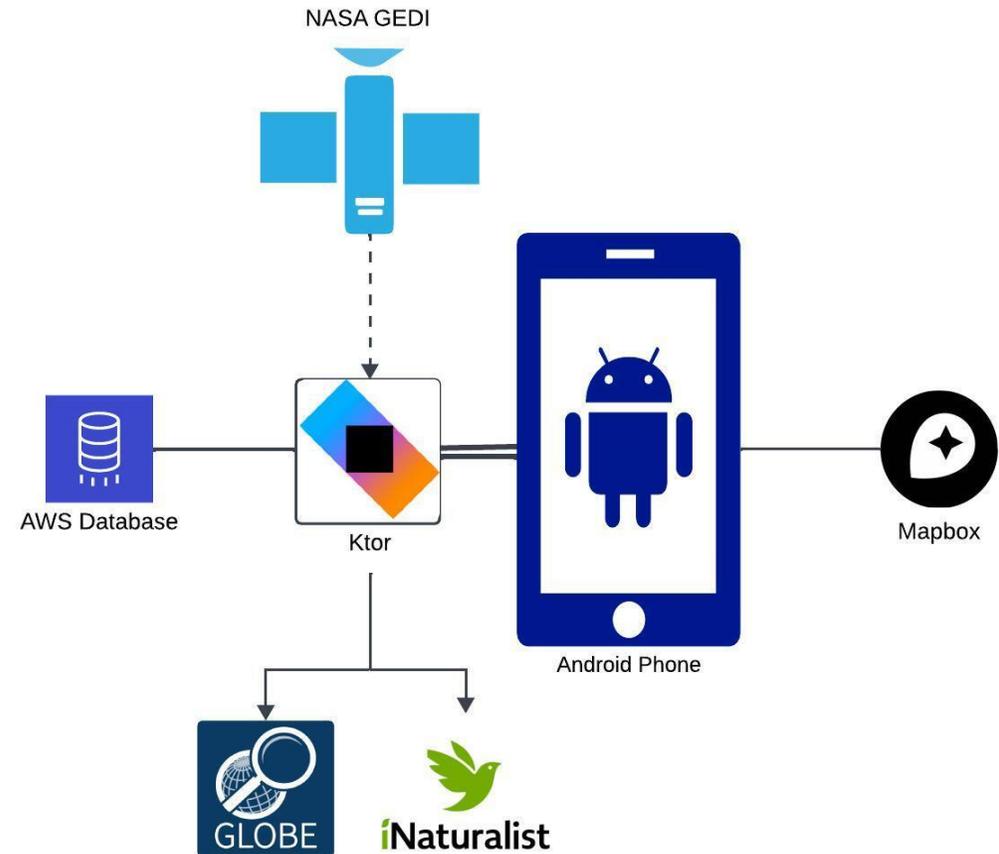
# Problem Statement

- ▶ Citizen science is a growing tool to help scientists gather data without physically being there themselves.
- ▶ This data is not often of good enough quality to be used for analysis.
- ▶ The data also is not checked for tampering and integrity.
- ▶ Citizen science is not very common in small communities globally, where most biodiversity exists.
- ▶ Facilitating the way citizen science is done helps conservation and biodiversity
- ▶ Currently, scientists are calling for 30% of the earth to be protected by 2030.
- ▶ 17% of earth is currently conserved.



# Solution Overview

- ▶ Android application
- ▶ Direct Users to GEDI satellite locations
- ▶ Offline routing
- ▶ Simple and Basic UI
- ▶ Lightweight data transfer
- ▶ Collaboration with Forest Frames (Group 2)



# Key Requirements

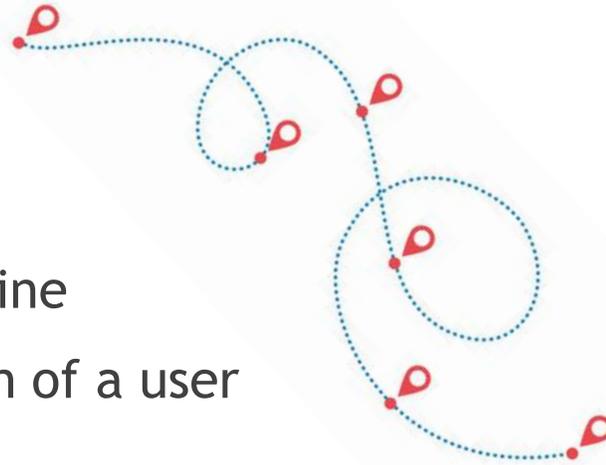
## Functional Requirements

- ▶ The system will allow the user to login to an account
- ▶ The system will display a map of GEDI satellite footprints
- ▶ The system shows a route to a GEDI footprint
- ▶ The system confirms the user is within a GEDI footprint
  - ▶ The system identifies the user's starting location.
  - ▶ The system “listens” for movement from the user.
  - ▶ The system actively calculates user's new location.
  - ▶ The system alerts user when the user location is within the acceptable GEDI footprint range.

# Risk and Feasibility



- ▶ Poor connection quality when uploading Data
  - ▶ Taxing on data usage
  - ▶ Repeated Upload
- ▶ Inaccurate sensors on a device
  - ▶ Unable to accurately track a user offline
  - ▶ Unable to correctly verify the location of a user
- ▶ Setting routes through unknown areas
  - ▶ Safety of users
  - ▶ Ability to make it to destination





# Closing

Mobile Application in collaboration with Forest Frames

Offline tracking and data verification

Promotion of Conservation and Biodiversity

Next Steps:

- Finishing up our Client Demo
- Refining our schedule to have a better layout of next semester
- Defining application specific roles between our group and Forest Frames