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Ian Tyler Applebaum

# Welcome to Temple University CIS Project in Computer Science Final Demos



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**SKROBAN**

Capstone Demo Fall 2022



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# SOKROBAN

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Abraham Schultz, Rob Burdash, Tyler Howard, Jianhua Chen, Alexander Photis, Juvenal Arellano-Santana  
Dr. Charles Wang  
Department of Computer & Information Sciences  
Temple University, College of Science and Technology, Philadelphia, PA



## Abstract

GeoTracker is a cross platform mobile application that allows a user to track and visualize a variety of environmental events (e.g. earthquake, wildfire, volcano, etc.) and weather, leveraging map locations. The user can interact with the map visualizing, animating, saving and sharing environmental events and weather. Additionally, GeoTracker offers the ability to view what the leading twitter trends within a given area of the map. GeoTracker also allows relevant tweets to show in the custom modals pertaining to specific disaster events.

## Features

- User can view natural disasters and earth type events on a global scale
- User can view current and historical weather data overlaid on map.
- User can view trending tweets in a region.
- User can view if there are recent tweets about a given disaster.
- User can log in and save disasters.
- User can share disasters with others via local messaging applications, social media, or email.

## Challenges

- Cross platform stability was a reoccurring issue. Particularly with regards to UX and weather visualization.
- Weather animation performance was difficult to get looking fluid. As the "frame-rate" was essentially one frame per in app day.
- Disaster animation and filtering verification and testing.

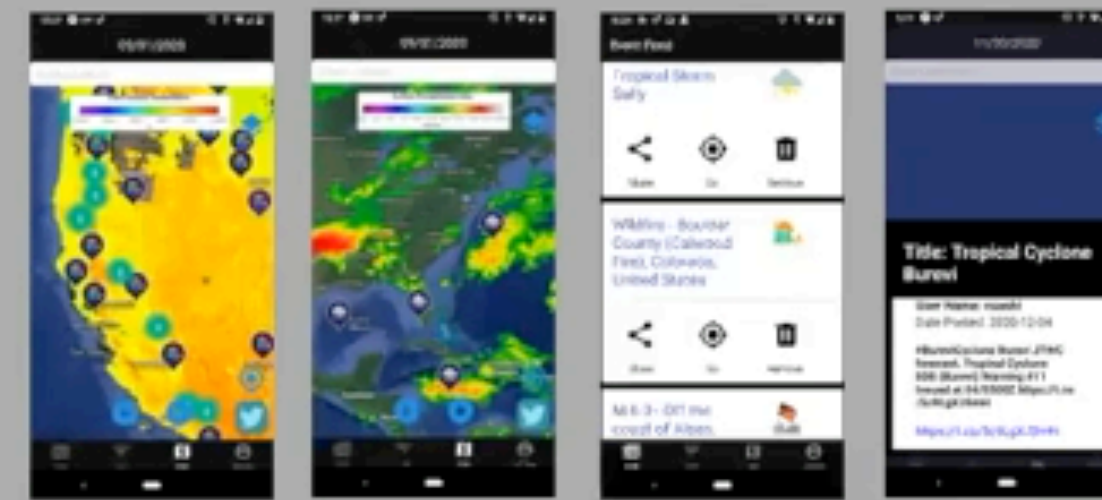


Figure 1: Screen Shots of GeoTracker

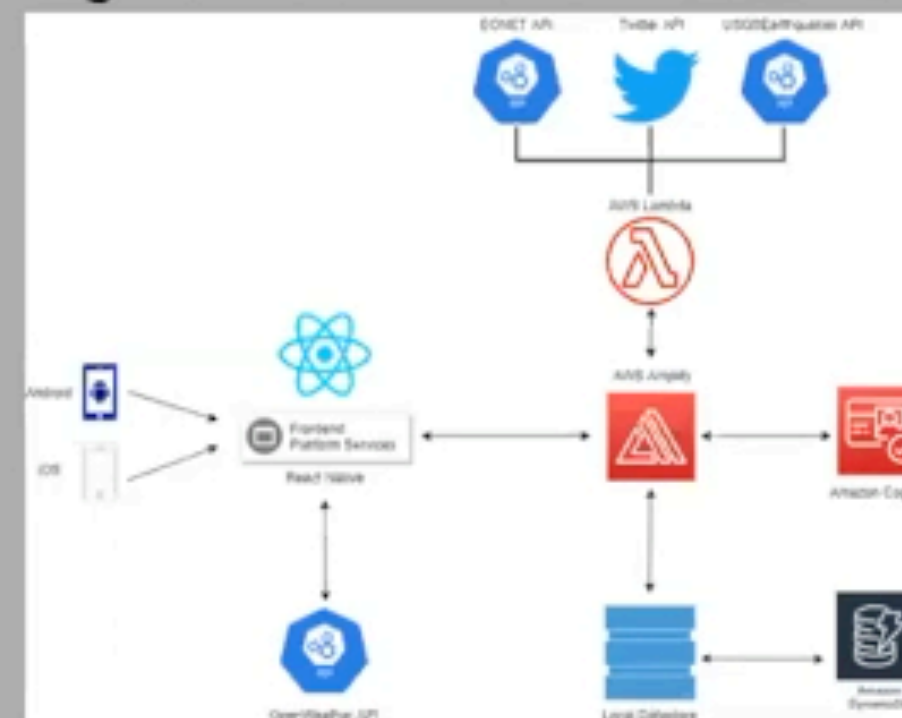


Figure 2: System Block Diagram

## Design And Architecture

GeoTracker has a front end built on top of react-native to allow for easier cross platform development. The backend was built and hosted using AWS services. AWS Amplify serves to consolidate and make available as endpoints various lambda functions which call and preprocess twitter and weather data (shown in figure 2). This creates a custom API which we can call from the frontend when needed. AWS Cognito is used to allow for easy user sign in and authentication. The benefit of using AWS and lambdas is that in theory this app should scale very well, with the only limitation being calls to twitter API (which would have to be paid for after a certain volume).

## Results

We were able to successfully complete all the features we set out to implement. We were pleasantly surprised at the utility and usefulness of the twitter features. Future improvements could be done with animation of weather to allow for cleaner looking animations. Also, we could optimize the UX and perform more usability tests. Lastly this product would benefit from a more comprehensive testing regiment on many more devices. We tested on about 10-12 different devices total.

# GeoTracker

## Capstone Demo Fall 2020