PowWow++

AgMonitor

Daniel Kluzner, *Lead*

Erick Rios, *Scribe*

Sai Kathika
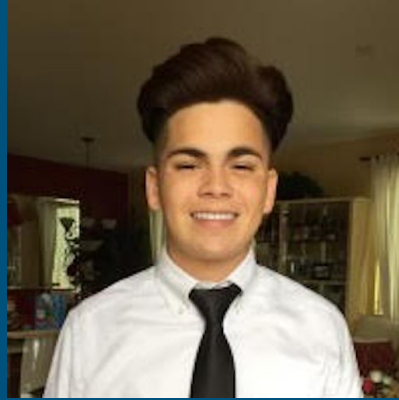
Kelly Yeh

Huanhua Xu

Mentor: Stan Knutson

Daniel Kluzer (Team lead)

Eric Rios (Scribe)

Sai Kathika

Huanhua Xu

Kelly Yeh

Problem/Background

- Farming and agriculture play a critical role in the modern world. By 2100, the world will need to have increased its calorie intake by 80%.
- Farming inefficiency has been an underlying issue from California drought to the COVID-19 pandemic
- Helps create jobs and opportunities in disadvantaged communities
- AgMonitor: AI for precision agriculture
  - provides software for tracking data, managing tasks, communicating between teams, and scheduling upcoming irrigation/fertigation times
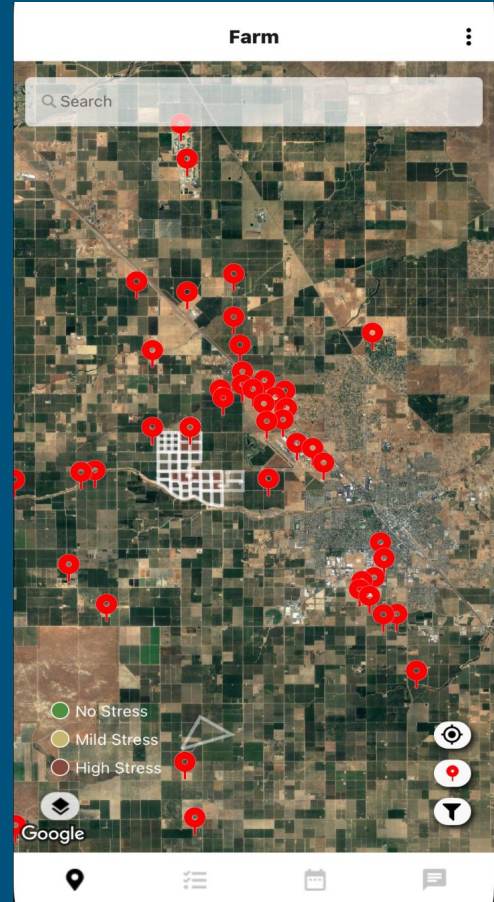
Project Overview

- Expand current mobile app to include additional functionality
  - Sensor data graph display
  - Calendar feature for managing upcoming tasks and setting alerts
- React Native Framework
  - Easy functionality for IOS/Android
- Victory charts
  - Intuitive in React Native
- GraphQL
  - Sensor definition fetching
- CouchDB, SQLite
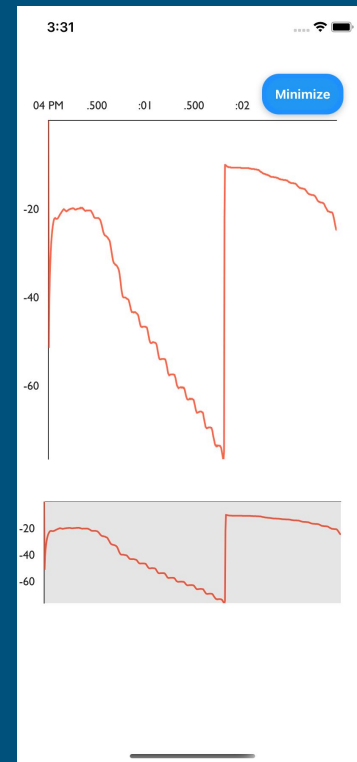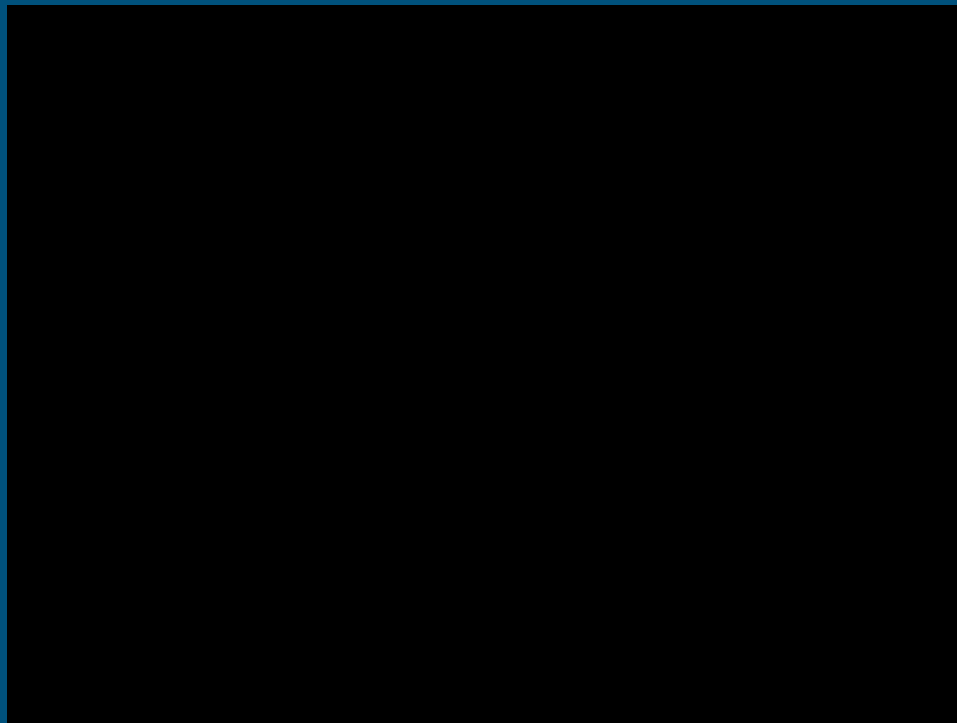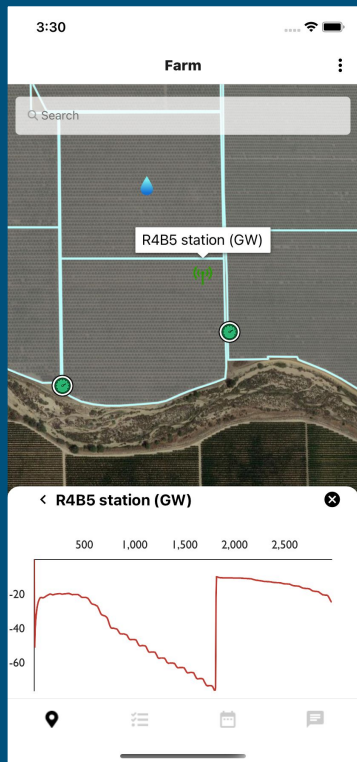 - Caching data for faster loading times

Challenges

- Working with a complicated environment
  - A very large codebase
  - React Native requires many dependencies
  - Proprietary code
- Lack of experience with React Native/Typescript
- Using Windows means no access to iOS version
  - Certain bugs happen in Android that doesn't happen in iOS
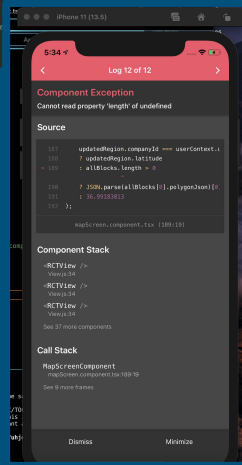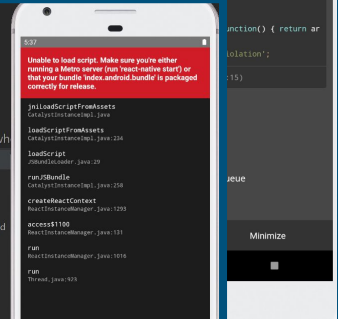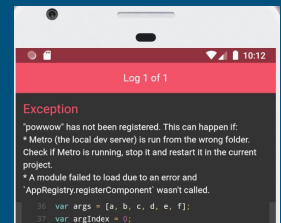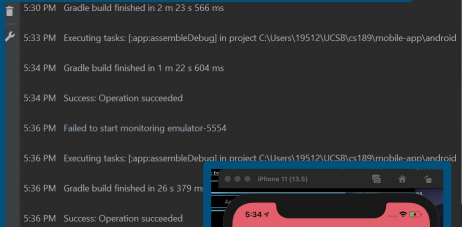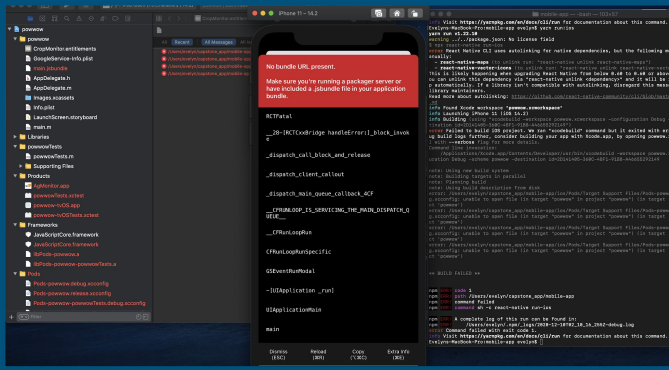
Next Steps

- Real-time data display using API calls
- Expanding how data is viewed in full-screen mode
  - Switching between viewing different metrics
  - Multiple graphs
- Task creation/editing in the calendar and notifying field crew
- Zooming and pinching functionality in charts
  - Changes time interval that is shown
- Creating issue report from sensor data

Demo

Thank you!