Drivelytics 2.0

Team BumbleB

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Abstract

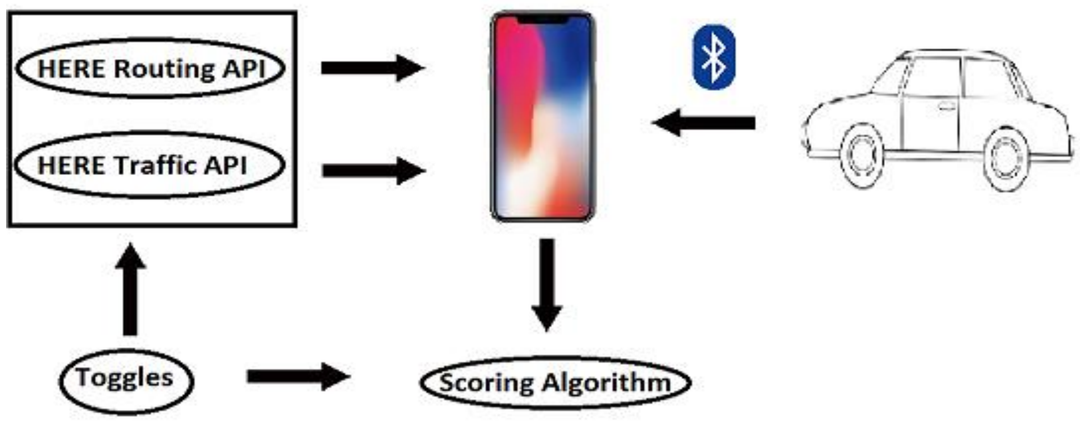
State Farm's Drive Safe and Save mobile application rewards participants with insurance discounts based on the quality of their driving performances. Currently, the mobile application uses a beacon to track driver performance. The previous semester's (Fall 2018) State Farm senior design group developed a beaconless version of the mobile application, which uses Bluetooth to track driver performance.

The goal of our senior design project was to augment the beaconless solution and implement application enhancements and an improved scoring algorithm to produce a more accurate and nuanced representation and rating of the driver's performance and to create an all-in-one mobile application for State Farm insured drivers.

Using HERE API, we were able to retrieve the current road's speed limit and accurately determine if the user is speeding. Additionally, we included real-time updates for traffic and construction from HERE API to determine the severity of the speeding incident. We also implemented push notifications informing users of important information such as upcoming bill payments, emergency weather conditions, and post-trip scores.

Keywords: Telematics, iOS Development, API Interaction, Bluetooth

Architecture



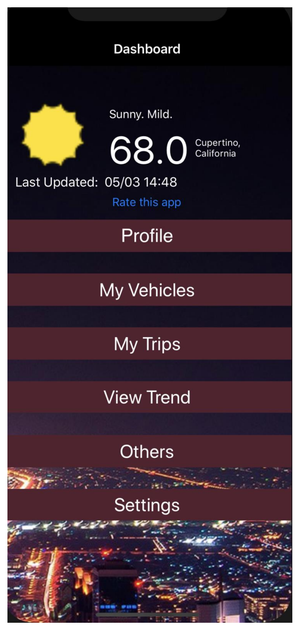
Impact

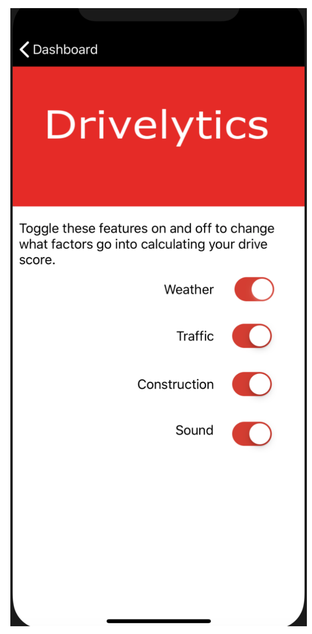
- Encourage safer driving habits
- Improved scoring accuracy
- Provide useful feedback to drivers
- Increase customer usage and experience
- Increase customer retention and enrollment

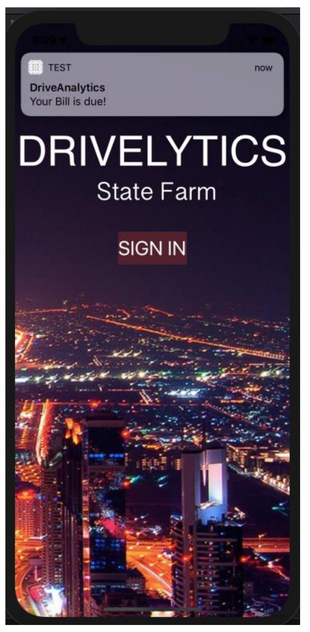
Performance

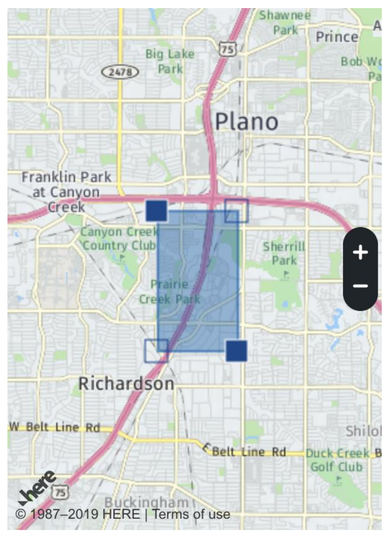
- Accomplished all required features by deadline
- Fully implemented all Tier 1 (High Priority) enhancements – Traffic, Construction, Speeding
- Implemented Tier 2 (Medium Priority) enhancements – Push Notifications
- Demoed to State Farm sponsors and received positive feedback

Results







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Summary

Throughout the course of the Spring 2019 capstone project, our team researched and implemented enhanced functionalities to the existing Drivelytics mobile application. The three primary enhancements accomplished by our team were speeding, traffic, and construction. These enhancements improve the existing implementation of the driver scoring algorithm by increasing robustness through the addition of new metrics. Additionally, our team implemented push notification support for before and after trips to notify users of drive scores, billing cycles, and emergency weather alerts. Lastly, we added a toggleable option to allow users to customize which additional metrics would influence the calculation of their drive scores. In conclusion, our team was able to improve multiple aspects of the previous semester's Drivelytics mobile application, such as algorithm design, external data usage, user experience, and application robustness.