BOE Sidewalk Assessment System

Team Members: Gerardo Bracamontes, Joshua Chang, Christopher Chau, Robert Cueto, Salvador Gomez, Zachary Justus, Ricardo Miranda, Bryan Nguyen, Jorge Sanchez, Amy Torez

Faculty Advisor: Dr. Jungsoo Lim

Liaisons: Ted Allen, Alisa Blake, Miguel Grajeda, Johnathan De Leon, Irvin Nguyen, Chris Tsangaris

City of Los Angeles Bureau of Engineering

College of Engineering, Computer Science, and Technology

California State University, Los Angeles

Background

The Project is a multi-year program to develop a rover to detect, measure, and record sidewalk data in Los Angeles.
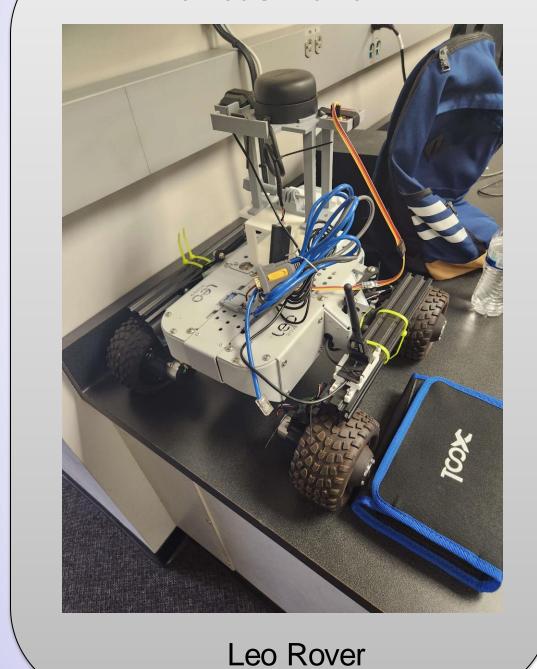
Objectives

- Port the previous rover on the new platform.
- Design and Develop a method to collect vertical displacement.
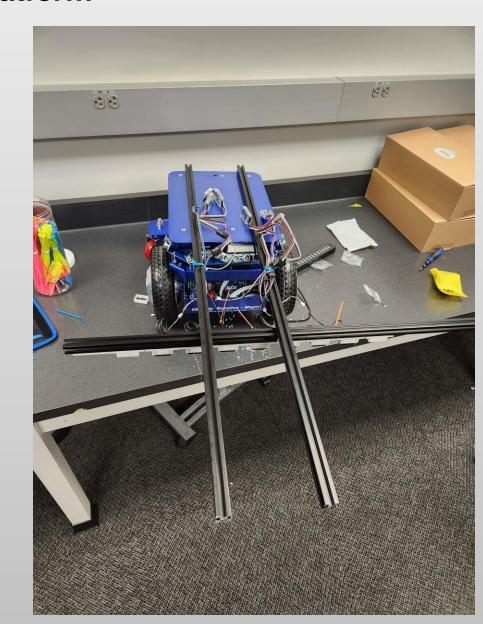- Calibrate and ensure modules are installed and measuring properly.

System Requirements

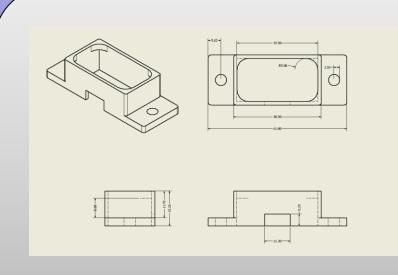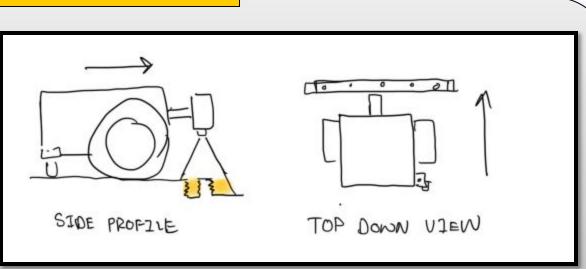| #	Requirement Name	Performance Objective	Capabilities
1.1	Verify calibration of slope measurement	Ensure accurate slope measurement	Slope measurement is accurate within standards
2.1	Port current program to new Ubiquity Rover platform	Port all functionalties to be used with new rover	Port was complete for rover usage
3.1	Develop a method to collect horizontal/vertical displacement	Detect changes in horizontal and displacements	Lidar bar detects and records small displacements
4.1	Develop software to display geographical data with UCLA Civil Engineering	Display geographical data using data from UCLA Civil Engeering	Data is correctly recieved and displayed

Previous Platform

Leo Rover

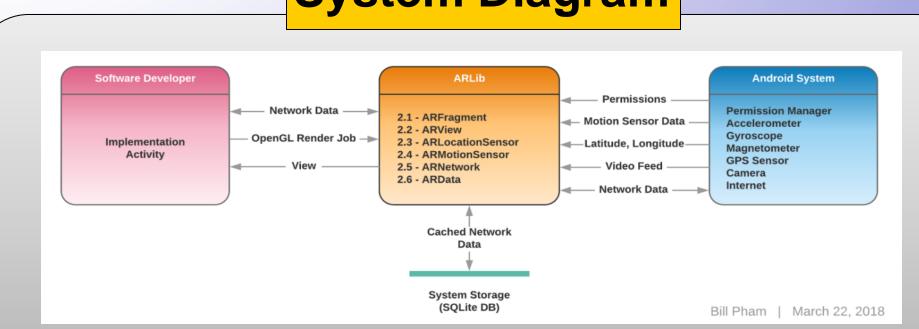### The New Platform

Ubiquity Rover and Rover with Lidar Bar Attached

Design Approach

Lidar Bar Design

SIDE PROFILE   TOP DOWN VIEW
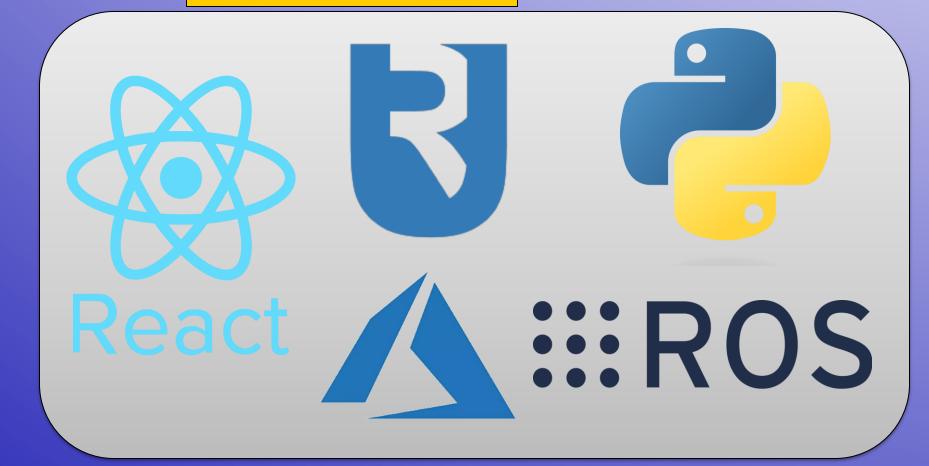
System Diagram

Bill Pham | March 22, 2018

Technologies

Conclusion

Despite many delays being hinderances to development, the team successfully achieved every task, most importantly ported all the previous work of past semesters onto a new platform. The new rover will allow easier development and provide less design constraints for future semesters.