ILLINOIS
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

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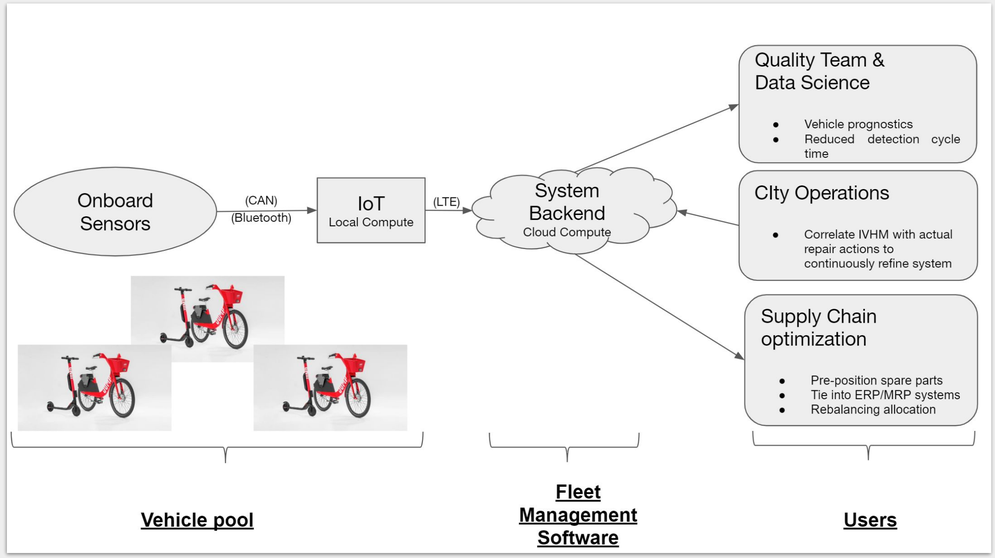
Master's, MechE

NeMo, Summer 2019
Manager: Ashish Dighe

Uber

P1: Integrated Vehicle Health Management in shared LEVs



Needs:
- ❑ Redundancy in city operations.
- ❑ Optimise the maintenance process
- ❑ Lack of full knowledge of deployed product

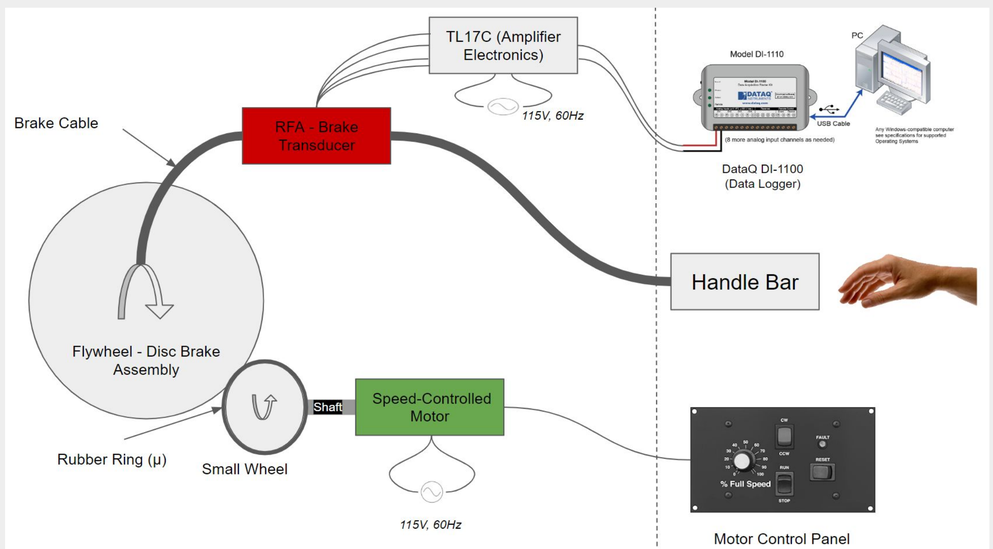
Work done:
- ★ Wrote software for integrating Clarion IoT with Tire Pressure Monitoring System (TPMS)
- ★ Testing underway on Reliability bikes

Next steps:
- ➔ Create a centralized platform and integrate with Hive tables
- ➔ Roll out in SF for testing
- ➔ Add more sensors

Tech tools: C++, Python, Embedded Shell, BlueZ stack

Worked with: Sreekanth Boga, Mattis Fjallstrom, Dan Sussna, Joe Fetter

P2: Brake Cable Tension Test



Needs:
- ❑ Optimise maintenance process.
- ❑ Metrics for manufacturing assembly line

Work done:
- ★ Worked on the project conception and math.
- ★ Setup electronics and data logging units
- ★ Created DOE

Nest steps:
- ➔ Perform experiments and provide metrics for Ops team and product supply teams

Tech tools: JMP, DataQ logging, Tension sensor electronics

Worked with: Robert Biafore (CAD and Manufacturing)

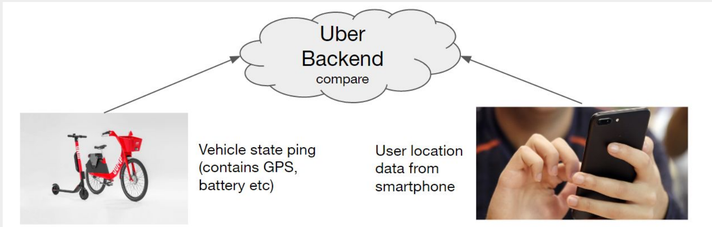
P3: GPS Accuracy Measurement

Needs:
- ❑ Performance data of current IoT.
- ❑ Creating supplier specifications for next gen components

Results:
- ★ Summary spreadsheet for all markets with GPS accuracy details for both bikes (~ 30 meters) and scooters(~60 meters).

Tech tools: SQL Querybuilder

Worked with: Noah Sylvan, Alex Tedeschi (NYC team)



P4: Alternate Supply Chain Models: To Improve Unit Economics

Needs:
- ❑ Unlock efficiency to reduce costs

Developments:
- ★ Created a custom dashboard for stats
- ★ Looked into possible improvements in current maint & city operations

Nest steps:
- ➔ Validate model by gathering inputs from stakeholders and roll a pilot project

Tech tools: SQL Querybuilder, Dashbuilder

Worked with: Ashish, Thomas Kreek