Final Project Brainstorming

Team: *MRS*

Project Idea #1:

Topic: A universal scoring based approach on driving behavior to identify safe vs. risky drivers.

Sensor Data: Accelerometer, Linear acceleration, GPS, heading compass

Use Case:

- Assess how risky a driver is.
- 4 main aspects of assessing driving behavior (speeding, acceleration, braking, cornering).
- For the user, they can view within their trip, events that were considered risky driving.
- Insurance companies can use an alternative approach to price insurance premiums based on driving behaviors rather than their location and demographic factors.
- Insurance companies can share information about whether to provide insurance policies to certain drivers based on their driving history rather than only through claims. Similar to how credit score works.
- Insurance companies can track individuals' reckless driving behavior and report to the police.
- Creates more incentive for drivers to drive safe in the streets.

Project Idea #2:

Topic: Party Locator Using Triangulation and Sound Sourcing

Sensor Data: Sound, GPS

Use Case:

- Through triangulation methods, we can bette source specific sounds that are more common during parties (loud music).
- Provide a route to find the closest party for the person to join.
- Creates more incentives for socializing
- We can use advanced tools like Izotope RX which can removal unwanted noises (sirens, walking, cars etc.) and focus on specific frequencies that are more related towards music.

Project Idea #3:

Topic: E Scooter Collision Prevention

Sensor Data: Proximity, GPS, Sound, Accelerometer

Use Case:

- With e-scooter usage on the rise, there are issues pertaining to rider (and pedestrian) safety.
- This project can help mitigate collision risks to enhance riding experience.
- If collision risk is identified, the system can provide alerts/alarms.
- Rider can receive real-time alerts about potential hazards.
- Application will appeal to municipalities, rental services, and e-scooter manufacturers.
- Encourage safe riding behaviors

Schedule:

Week 1 [Oct. 13 - Oct.19] Interview & Literature Review
- Menghan: Interview 3 People
- Ravish: Interview 3 People
- Shruti: Interview 3 People

Week 2 [Oct. 20 - Oct.26] Literature Review
- Menghan: Literature Review
- Ravish: Literature Review
- Shruti: Literature Review

Week 3 [Oct. 27 - Nov.2] Data Gathering
- Menghan: Data Gathering
- Ravish: Data Gathering
- Shruti: Data Gathering

Week 4 [Nov. 3 - Nov.9] Data Gathering
- Menghan: Data Gathering
- Ravish: Data Gathering
- Shruti: Data Gathering

Week 5 [Nov. 10 - Nov.16] Cleaning and Exploratory Analysis
- Menghan: Cleaning
- Ravish: Exploratory Analysis
- Shruti: Exploratory Analysis

Week 6 [Nov.17 - Nov.23] Data Analysis & Cleaning/Preprocessing if needed
- Menghan: Data Analysis
- Ravish: Spatial Visualization Scripts for Dashboarding
- Shruti: Data Analysis

Week 7 [Nov.24 - Nov.30] Develop Dashboards
- Menghan: Develop Dashboards
- Ravish: Key Metrics for Dashboards
- Shruti: Key Metrics for Dashboards

Week 8 [Dec.1 - Dec. 7] Final Touchups
- Menghan: Final Touchups
- Ravish: Final Touchups
- Shruti: Final Touchups

Week 9 [Dec.8 - Dec. 14] Shoot and Edit Demo Video

Week 10 [Dec.15 - Dec.18] Submission