IS160 Lab 14

Porsche Sensor Implementation

Define your information system (eg. What type of system? Where in the organization? who will use it mostly? What output/result can you expect? Who will fund this? How about ethics? etc...)

- Object detection and motion detection for the new Porsche. Upper middle class population would be the target audience.
- Fully functioning luxurious electric vehicle.
- Keep the same motto as Porsche; offering the luxurious type of vehicle which is a sporty type of look and offers great performance
- Could see Porsche looking to break into the electric vehicle market and offer its consumers an electric vehicle
- If not Porsche, Investors may like the idea of a luxurious German-built car.

For each of the development phases, list the major activities.

Make the car go electric, replace gas, and add the object detection feature.

1. Ideation
    a. Share the idea with potential investors and brainstorm together.
2. Definition
    a. State the requirements to launch, manage, and complete the project.
3. Data Curation
4. Prototyping
5. Production
6. Maintenance

Data (what kind of data? Where will you get the data? How will you address the feature engineering, data training/test, etc)

Steal everything from Tesla.

Providing images and live feed from highways can be a way of getting the model to recognize the environment of a highway. Having a car going around to get live footage in the streets with the camera on the car would be good data to use to train the model. Google maps has done this and we could implement the same concept as them.

Fine-tuning and implementation

- We will be implementing the convolution neural networks (CNN)
- The algorithm will be used for object detection and classification. With Ultrasonic sensors and cameras, object detection can be possible

- Semantic segmentation will be used to segment images into different sections so that information can be processed thoroughly for the car system detection to work seamlessly.
- The predefined categories will be cones, pedestrians, other vehicles, and traffic lights/signs

Maintenance (may need more data? new data??)

- Data from the car performance and owners' feedback.

Addressing unforeseen conflicts/disasters

- Testing the new object detection system will be a conflict that may take an extravagant amount of time to perfect and get the system to be as close to 100 percent effective.
- Expenses will be an issue as it can take millions of dollars in funds to implement and test

Implementing customer feedback to improve customer satisfaction

- This can be done through surveys and questionnaires. Have the employee take down notes of what the customer has to say about the car when getting it fixed.
- Learning from the flaws of other electric vehicles and look to address the problems that they have in our own vehicle