Micah Perkins

Design 1-2

* Pedestrian Backup System
  + Backup Camera & Side View Cameras
    - Only need a single camera per angle, must be replaceable
      * Likely 3 angles, 1 rearview and 2 blind spot views, one for each side
    - Weatherproof lenses
      * Obviously needs to be water/heat/ice resistant, not much else
    - Needs a small suite of external lights that can be turned on at night to illuminate each camera viewpoint
    - Object recognition software
      * This does not exist yet but would be game changing if implemented, especially if it was integrated with the infrared and motion sensors. Being able to recognize human motion would allow cars to avoid hitting someone potentially without the aid of the driver, and would make life-ending incidents much less likely
  + Sensor Suite
    - Motion Sensors
      * Motion sensors integrated with one or more cameras would make the sensor suite significantly more capable of identifying and avoiding pedestrians
    - Electromagnetic sensors
      * Electromagnetic sensors create a bubble around the car which detects anything entering that bubble. It could be made more effective by double-layering that bubble to identify the location of such objects more precisely
    - Ultrasonic sensors
      * Ultrasonic sensors are mostly used for close range object detection. There’s not a lot of room for improvement with these sensors but they are a welcome addition to the ideal sensor suite
    - Radar
      * Radar can extend past the general range of ultrasonic sensors and could be integrated with the ultrasonic sensors to increase the amount of data available about the current surroundings
    - Infrared sensors
      * Heat detection is only useful for avoiding people but would still be something worth installing in conjunction with the other sensors.
      * Heat detection could be integrated with object recognition to significantly improve the efficacy of object recognition
  + Mirror Suite
    - Side Mirrors & primary rearview mirror
    - Rear-mounted convex mirrors (for larger vehicles)