Race of Doom

Team 8

Project Overview

- *Creating an autonomous vehicle that can receive data from each group to allow for a "race"*
- *Get through different, real-world obstacles successfully*

- Obstacles include
  - People crossing the street
  - Stop signs
  - Bad guys popping up that need to be shot
  - Construction
  - Walls

User Needs

- *To stay between the lines on the road and feel safe while driving*
- *To not hit objects or people.*
- *To stop at stop lights and yield when it is indicated.*
- *To get from place to place efficiently.*

Requirements

- *Requirement #1: Avoiding Collision with other lanes (walls)*
  - *The safety of our users is important hence, not colliding with walls is an excellent way to represent road safety*

- *Requirement #2: Efficient and consistent Stoppage*
  - *The car must stop when pedestrians are present*
  - *Our vehicle must stop at Stop signs/lights*

- *Requirement#3: Hazard Detection*
  - *Vehicles must avoid road hazards and adapt to them accordingly (such as construction)*

Engineering Standards

We need to meet the three engineering standards Below:

- *ISO 26262: Functional Safety for Road Vehicles*

-provides some guidelines for the safety of electronics and systems such as autonomous vehicles

- *ISO/SAE 21434: Cybersecurity for road vehicles*

-Addresses the software and hardware components and focuses on the cybersecurity of automotive systems

- *ISO 13482: Robots and robotic devices*

-Addresses safety requirements for autonomous and personal robots that interact directly with humans

Conclusions

- *Users need a safe and reliable autonomous vehicle to allow for confidence when traveling*
- *Adhere to users by using real-world obstacles to represent valid test cases for our prototype*

Thank You!