PEDAC1

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Overview

Team Members:

Project Manager: Sam Chung
Project Facilitator: Tyler Maklebust
Customer Liaison: Wan Kim
Configuration Manager: Mark Velez
Security/Safety Expert: CJ Cummings

Client:

Mr. David Agnew

Professor:

Dr. Betty H.C. Cheng

Project Overview

- Autonomous driving systems
  - Must exhibit basic driving capabilities
    - Stay in lane
    - Brake at intersections
    - Remain in control during maneuvers
- PEDAC
  - Implemented in fully autonomous vehicles
  - Avoids collisions with pedestrians
  - Minimizes the time lost while doing so

Motivation

- This type of system is required with a vehicle that is fully autonomous
- Ensuring safety
  - All pedestrian collisions must be avoided
- Maximizing efficiency
  - Measured by time lost from avoiding any collisions
  - Avoiding collisions while minimizing time lost

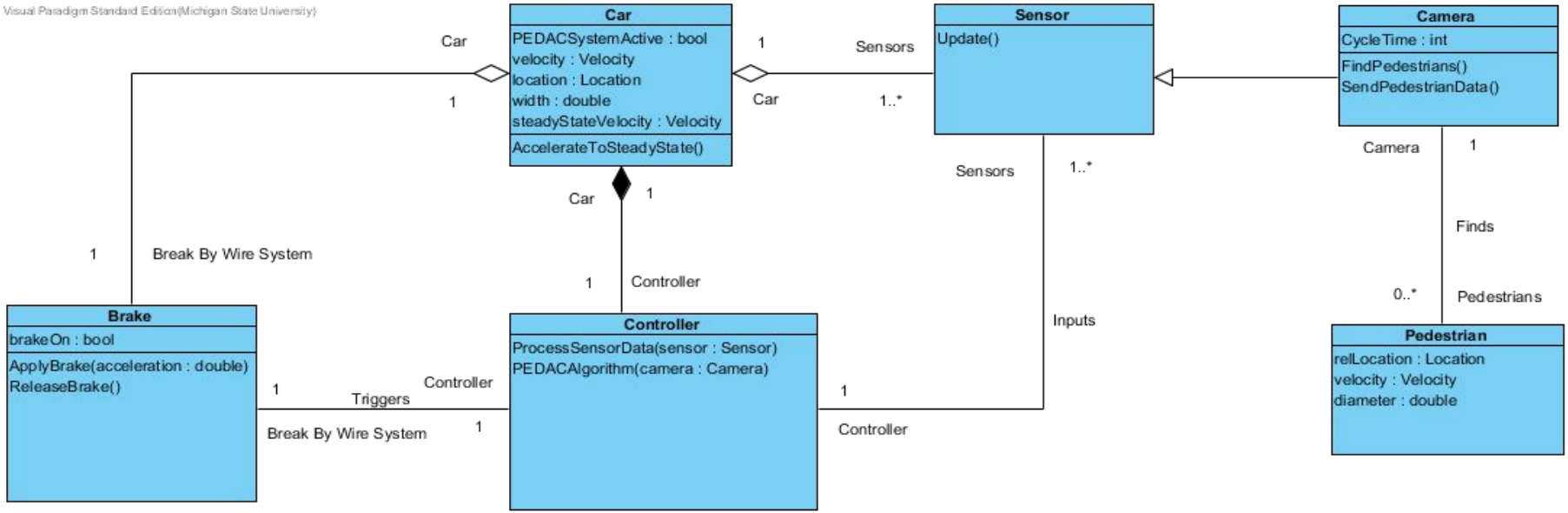
Features

- Uses camera sensor output to determine if a pedestrian collision is possible
- If a possible collision is detected, speed is reduced enough to maintain a safe stopping distance
- Minimum deceleration amount needed is calculated in order to reduce time lost and increase efficiency

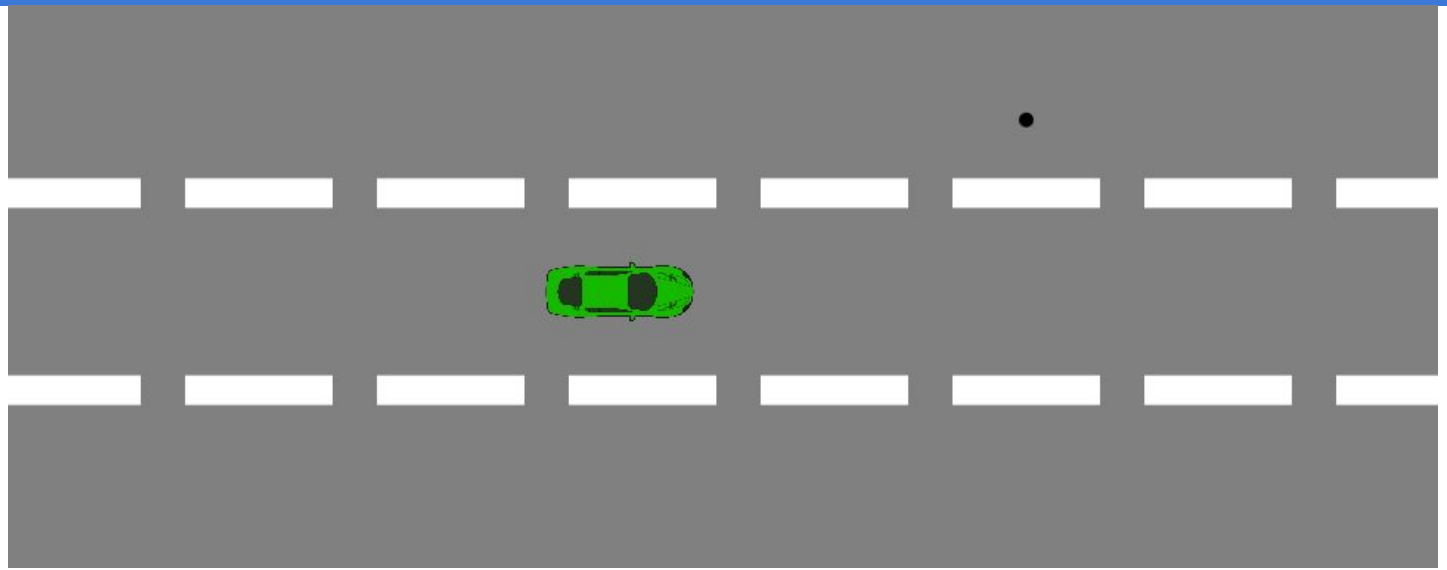
Domain Research

- Investigated technology used in avoiding collisions in autonomous vehicles
- Toyota Automatic Pedestrian Collision Avoidance

CLASS DIAGRAM



Demonstration



http://www.cse.msu.edu/~cse435/Projects/F2016/Groups/PEDAC1/web/prototype.html

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