

PEDAC1 Client Meeting Notes

1. Is there a driver who could override some of the autonomous functionality in an emergency?
 - o No, the system is fully autonomous
2. Are there other systems we can interface with besides stereo cameras?
 - o Just acceleration and braking control
 - o Assume camera sensor detects person accurately (100% of the time)
3. How well will sensors and pedestrian detection work under different weather conditions?
 - o For this study, still 100% detection
 - o Working at night, as well
4. Is there a possibility for false positives with pedestrian identification?
 - o Good question--maybe work your thoughts into project. As of now, no.
5. How should the KPI of efficiency be measured?
 - o Added time to trip caused by avoidance
6. Are there other actions we can take to avoid a pedestrian collision? (i.e. changing course)
 - o Just braking
 - o But how you brake over time is left open
7. What is considered the safe radius around a pedestrian?
 - o Just don't hit pedestrian (given the radius in project: 1.5m)
8. What are the upper and lower bounds of the vehicle speed in regards to our algorithm?
 - o The steady state speed from the project description is the upper limit
 - o No lower limit to speed
 - o Slow down as approaching pedestrian that may be crossing, speed up after
 - o When pedestrian is sensed, but not in direct line, maintain speed when possible
 - o Real world:
 - group some pedestrians together
 - track all pedestrians in field of view
 - auto detection of camera problems (dirty/blocked)
9. Should we account for a scenario where pedestrians are continuously moving?
 - o Not in the project description, maybe should be. Just work with given scenarios.
10. Will there be any warning or indication for the driver when a possible collision is detected?
 - o Not for this project, person is in the car but likely doesn't own the car and cannot do anything, besides maybe brace for impact.
11. How close to cut it?
 - o Real world (many variables and questions):
 - What is your planned place to stop?

- Come right up to pedestrian or leave room?
 - Would pedestrian even know that car had to stop for them?
 - o For project, just avoid the given radius (1.5m)
12. Are there any legal/liability issues with stopping or not being able to avoid collision?
- o Real world: many variables (e.g. Semi-truck behind that can't stop)
 - o There are no laws saying you can't hit a pedestrian that jumps out right in front
 - o There are no laws that say autonomous has to react better than a human
13. Can we assume that pedestrians act normally (crossing in a straight line, single direction)?
- o No, pedestrians can act in any way (e.g. crossing halfway then turning around)
14. Limitations of sensor (polling data from camera)
- o Weather would limit range (not part of project)
 - o Field of view limited by camera (not part of project)
 - o Intelligence/efficiency of detection of pedestrians (mentioned in description)
15. In real situation: concerned with changing coefficient of friction (traction)?
- o ABS/Stability control
 - o Use maximum amount of friction available, but friction available is out of your control
16. What actions should be taken by the system when an unavoidable collision is detected?
- o Brake as much as possible before collision, reduce impact
17. What are the expectations for the project deliverables?
- o A functional algorithm with results; we will be analyzing the performance of it
 - o Algorithm deals primarily with the control/behavior of the car in a given situation
 - o Visual simulation of the performance of the algorithm in scenarios (web-based)
 - Each scenario simulated
 - Performance indicators of each scenario
 - o Additional things
 - Possible other scenarios
 - Other observations
 - Should there be any more Key Performance Indicators?
 - Is there a key scenario (pedestrian movement) that should be included?