

ECE 322

Assignment 1

Arun Woosaree  
September 13, 2019

## 1

After reading the two papers, the two most essential factors which make software testing difficult in my opinion is:

1. human nature
2. the always changing nature of software

## 2

- **Functionality** Does the software allow the vehicle to work autonomously, without human input? Does it do so in an acceptable manner? (i.e. does it reach the destination in about the same amount of time as a good human driver would do or better? does it do it as safe as, or better than a good human driver?)
- **Performance and reliability** How reliably does the software react to its environment? Does the software still control the vehicle in an acceptable manner in more difficult situations? If certain conditions like heavier traffic puts a higher load on the processing unit for the system, does the software still behave reliably? It should work in different driving conditions (e.g. highways vs in-city, sunny vs slippery roads) Will the software perform just as reliably a few years from now?
- **Efficiency** Does the software utilize its resources efficiently? Does the software respond quickly enough to its environment?
- **Maintainability** Is the software well-documented? How easy is it to add functionality to the software? (e.g. if new driving laws have to be followed, how easy will it be to add a patch to be in compliance) How much technical debt exists in the software project When faults are found, how easy is it to fix them?
- **Usability** From the user's perspective, how easy is it to use the autonomous mode of the vehicle, and how is the user experience? Also, how easy it is to switch between autonomous and manual modes of the vehicle?
- **Portability** Can the software be used in multiple types of vehicles? (e.g. if there are multiple models of cars, can the same software be used with all of them?)

check if this  
is the right  
word

Risk Category	Technical Risk	Business Risk
Risk 1		
Risk 2		
Risk 3		