

ECE 322

Assignment 1

Arun Woosaree
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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

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- 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?

check if this
is the right
word

- 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?)

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