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Adversarial Attacks on Vision-based Deep Neural Networks in Autonomous Driving Vehicles

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Abstract

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Chapters

- Testing in the software development life cycle
- Limitations of traditional Testing
- Test Driven Development with its advantages and integrations with the agile model

Chapter 2

Problem formulation

2.1 Software Development Lifecycle

2.1.1 Introduction

General introduction on what SDL is and why it is needed in the first place

2.1.2 The waterfall model

Start with the introduction of the waterfall model with a focus on its limitations (i.e. lack of feedback from the client, no possibility to revision requirements, etc...)

2.1.3 Agile techniques

Extreme programming, CI/CD, DevOps, ...

2.1.4 Test Driven Development

Comparison with other agile methods

2.2 Testing embedded systems

2.2.1 Introduction

Embedded Systems (ES) are a combination of hardware components and software systems that seamlessly work together to achieve a specific purpose. Such systems can be programmed or have a fixed functionality set. Today evrywhere, spanning from the agricultural field, to the medical and energy ones, employ ES of various size and complexity to achieve a domain-specific, often critical, goal .

Furthermore, given the absence of a user interface in most cases, testing such systems can be particularly challenging, given the lack of immediate feedback. Usually, the testing process of ES follows the X-in-the-loop paradigm. Reference the old survey papers (i.e. X in the loop) that provide a summary of the main techniques

2.2.2 Test Driven Development fro Embedded systems

Reference to "TDD for Embedded C" and other books/papers

Chapter 3

Literature

Chapter 4

Conclusions

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