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An online corpus of UML Design Models : construction and empirical studies

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Stellingen

behorend bij het proefschrift

An Online Corpus of UML Design Models: *Construction and empirical studies*

Bilal Karasneh

1. Surprisingly, the impact of bugs on software quality has been overlooked as a possible factor for predicting the severity of software failures. Software quality can be the basis of a simple rule-based severity classification algorithm that outperforms machine learning approaches. This thesis – Chapter 3
2. UML models are usually published in the form of images, and the CASE-tool versions of the models are neglected. To make UML diagrams really useful, they should be converted to models again. This thesis – Chapter 4
3. The development of UML has been guided by experts' opinion more than empirical evidence. There is an urgent need for a corpus of UML models collected from industry and academia to serve as an open source repository for UML models for applying empirical studies. This thesis – Chapter 5
4. Design patterns are important for software design. Moreover, anti-patterns (poor solutions to code problems/bad coding practices) are important too, and they must be identified as soon as possible in the software development life cycle. UML models can be used for early detection of anti-patterns. This thesis – Chapter 6
5. Confidentiality of software design hinders progress in modeling research because companies are unwilling to share their software models. In the interest of scientific progress, more efforts must be made to promote model sharing.
6. Many people see UML as a “lingua franca”. Indeed, UML is used for communication between individuals from different cultures to reach a common understanding of software models, and supports a collaborative discussion that helps to build a good model.

7. UML repositories are in their childhood compared to source code repositories, or repositories in other fields like biology. It will take several years to reach the same state regarding community, service and support.
8. When making updates to the code, the design of software should be updated as well. Otherwise, problems might spread to the code like a disease, and the origin of the infection will be difficult to find.
9. In UML, it is hard to verify the semantics of the design. UML repositories can be a reference to assist in avoiding the most common problems in UML design.
10. A PhD student in computer science should be both a scientist and an engineer: a scientist studies the world as it is, and an engineer seeks to change the world.
11. Alfred North Whitehead said “the joy is in the journey”. The joy is found not only in finishing an activity but also in doing it. This holds in particular for the journey leading to a PhD.