REQUAL - Requirements Quality Analytics

Automated Quality Analysis of Textual Requirements using Machine Learning Techniques

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High demands on quality and increasing complexity are major challenges for the development of industrial software in general. Automotive software in particular is subject to additional safety, security and legal demands. In such software projects, the specification of requirements is the first concrete output of the development process and usually the only way of communication between manufacturers and suppliers. Thus, the quality of the output is crucial for the success of a project. However, in practice, two problem areas exist: First, due to reasons like lack of knowledge and missing experience of engineers, requirements quality often is not at a satisfactory level. Second, a massive increase of the number of requirements for software poses a scalability issue.

Many efforts have been targeted towards securing and improving the quality of requirement specifications. Current and former research approaches are mostly based on the standard ISO/IEC/IEEE 29148:2011 that offers nine essential characteristics for requirements quality. Since the majority of software requirements today are still formulated in natural language, these approaches focus on measurable indicators that can be derived from the text. In addition, due to the scalability issue of software requirements, automated procedures for the quality analysis are required. Thus, exploring and evaluating approaches that analyze the quality of textual requirements in an automated fashion is a major part in the research.

This work particularly addresses the relationships between textual indicators and individual quality attributes, as worldwide industry standards have defined them. Based on these findings, an automated quality analysis of textual requirements using machine learning techniques is implemented. During several assessment sessions, in which experts assess quality attributes of requirements, relevant information to develop a machine-learning model for the prediction of requirements quality is captured. The research is conducted in connection with current development projects of the German automotive industry.

Termin: **Mittwoch, 05.12.2018, 15:45 Uhr**

Ort: Kaiserstraße 89, 76133 Karlsruhe
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Veranstalter: Institut AIFB, Forschungsgruppe Information Service Engineering

Zu diesem Vortrag lädt das Institut für Angewandte Informatik und Formale Beschreibungsverfahren alle Interessierten herzlich ein.

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