Software Architecture Rationale Capture and Reuse Through Intelligent Argumentation

NagaPrashanth Chanda, Dr. Xiaoqing (Frank) Liu

ABSTRACT
A growing model for software architecture defines it as a set of principal design decisions which describe the system. These design decisions need to be made by resolving design issues in a collaborative environment that helps software architects to design the architecture of a system. The architecture design decisions are usually made based on experiences since there aren’t defined methods and models for architecture design. Each design decision yields a set of outcomes which impacts both the system architecture and the final product. As software product systems tend to be large in size, one need to understand the rationale behind decision of each architectural element. This is to justify the system’s design and to avoid critical architectural problems. Often during these design decision making process the rationale is not fully captured. This paper identifies and addresses the above mentioned research challenge. It presents a method for software stakeholders to use intelligent argumentation system for collaborative rationale capture. The argumentation will be recorded in an online system to document the rationale behind the design decisions resulting in product architecture. Finally, the proposed method is evaluated using a case study. It demonstrates feasibility of capturing software architecture rationale using intelligent on-line argumentation.

*The publication of this abstract is intended for educational purposes only from an internal symposium and its content has not been peer-reviewed.