

Ra'Fat AL-Msie'Deen Marianne Huchard Christelle Urtado

Reverse Engineering Feature Models



Companies often develop in a non-disciplined manner a set of software variants that share some features and differ in others to meet variantspecific requirements. To exploit existing software variants and manage them coherently as a software product line, a feature model must be built as a first step. To do so, it is necessary to extract mandatory and optional features from the code of the variants in addition to associate each feature implementation with its name. In this book, we propose an automatic approach to organize the mined documented features into a feature model. The feature model is a tree which highlights mandatory features, optional features and feature groups (and, or, xor groups). The feature model is completed with requirement and mutual exclusion constraints. We rely on Formal Concept Analysis and software configurations to mine a unique and consistent feature model. To validate our approach, we apply it on several case studies. The results of this evaluation validate the relevance and performance of our proposal as most of the features and their associated constraints are correctly identified.



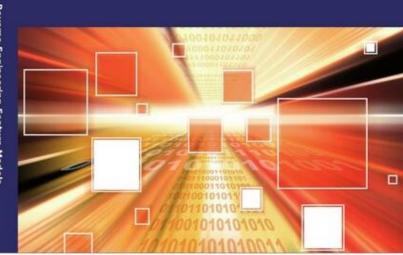
Ra'Fat AL-Msie'Deen

Ra'Fat Al-Msie'Deen received Ph.D. in 2014 from University of Montpellier 2 for science and technology, France. His research interest includes Software Engineering, Software Maintenance, Reverse Engineering, Reuse, Variability Modeling, Reengineering, Software Product Line.



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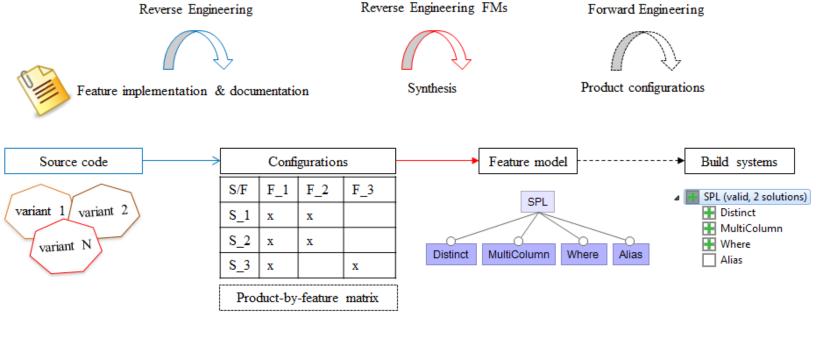
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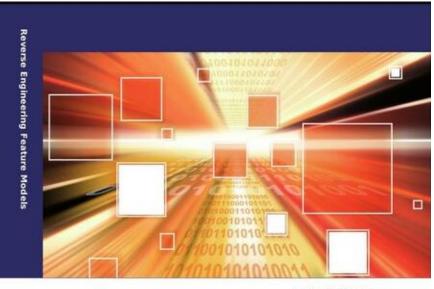
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