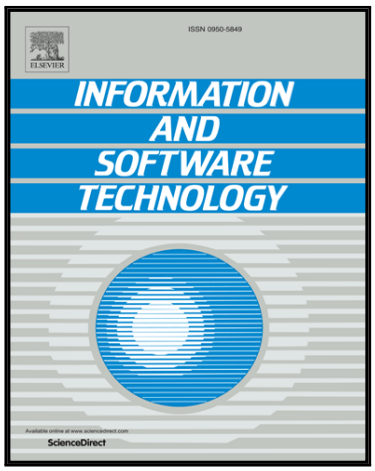

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Feature Interaction in Software Product Line Engineering: A Systematic Mapping Study

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Abstract

Context: Software product lines (SPL) engineering defines a set of systems that share common features and artifacts to achieve high productivity, quality, market agility, low time to market, and cost. An SPL product is derived from a configuration of features which need to be compounded together without violating their particular specifications. While it is easy to identify the behavior of a feature in isolation, specifying and resolving interactions among features may not be a straightforward task. The feature interaction problem has been a challenging subject for decades.

Objective: This study aims at surveying existing research on feature interaction in SPL engineering in order to identify common practices and research trends.

Method: A systematic mapping study was conducted with a set of seven research questions, in which the 35 studies found are mainly classified regarding the feature interaction solution presented: detection, resolution and general analysis.

Results: 43% of the papers deal with feature interaction at early phases of a software lifecycle. The remaining is shared among the other categories: source code detection, resolution and analysis. For each category, it was also identified

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