



Título: Agape: A Syntactic-Based Analysis Approach for Automatic APIs Integration Points Discovery in Systems of Systems

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Resumo:

Integrating Constituent Systems (CSs) is one of the greatest challenges in Systems of Systems

(SoS) engineering. Even at the technical-logical level, obtaining such integration is a difficult, time-consuming, and error-prone task that requires a lot of attention from CS developers responsible for the task — especially if it is performed manually. To alleviate this task, this work proposes a new semi-automatic approach, called Agape, to discover probable integration points between pairs of CSs. Agape employs syntactic similarity analysis on attributes of APIs from the pairs of CSs candidates of integration to identify the matching endpoints that are more likely to be used for integration purposes. We performed a two-fold evaluation to assess Agape. In the first evaluation, we perform a controlled experiment to evaluate the performance of our approach and empirically define the best similarity algorithms and thresholds for the task of identifying integration points between CSs' APIs. In the second evaluation, we use our approach in a real setting to identify API integration points between two CSs from an SoS of a multinational computer manufacturer. Then, we conducted a semi-structured interview with experienced developers of this SoS to evaluate the outcomes. Our results suggest the Agape performs well in both real and controlled settings and was considered very helpful by interviewed.

Banca examinadora:

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