Goal-driven automated composition of Function-as-a-Service workflows

Mots clés :
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Résumé du projet de recherche (Langue 1)

Serverless computing, relying on the Function-as-a-Service (FaaS) paradigm, offers many benefits for application development, as it deals with deployment and dynamic resource management transparently for the developer. However, the developer still needs to manage a large number of elementary functions and develop the often low-level workflow for coordinating them. An alternative way for application development relies on methods from the goal-oriented requirement engineering (GORE) domain, where high-level specifications of applications are elaborated in terms of goals. The proposed PhD research will focus on leveraging the KAOS GORE method for enabling automated development of FaaS workflows in a goal-driven way. By combining both semantic and formal models of goals and functions, this research aims to produce an application development platform that will support: - Goal-related reasoning and recommendation of goal refinement and goal-to-function mapping to the developer, from high-level goals down to the generation of FaaS workflows; - A machine learning process for providing improved recommendations by enriching the semantic inference logic from the history of goal decompositions.