Jaejoon Lee: Service-Oriented Product Lines: Concepts, Practice, and Beyond

The service orientation (SO) is a relatively new paradigm for software development: systems are no longer developed, integrated, and released in a centrally synchronized way, but services are developed and deployed independently and separately in a networked environment. This is a promising candidate for supporting continuously changing user needs and expectations, as more and more software systems are connected to the Internet. That is, their evolution could be supported and accelerated by dynamically adding and integrating services through the Internet. Adopting SO in practice for developing reusable core assets of a product line, however, has uncovered several challenging issues, such as how to identify services, determining configurations of services that are relevant to users' current context, and maintaining system integrity after configuration changes. In this talk, I will first introduce some related and relevant concepts in the literature and explain a method that was proposed to addresses those challenges by adapting a feature-oriented product line engineering approach. The proposed method is the novel fusion of the two research themes of services and software product line engineering. The method is based on the feature analysis technique that enables us to identify service features of a product line and organize them into a model called a feature model. The method is notable in that it guides developers to identify services at the right level of granularity, to map users' context to relevant service configuration, and to maintain system integrity in terms of invariants and pre/post conditions of services.

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