SEMINAR ANNOUNCEMENT

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Room "Aula T014" - Abacus Building (U14)

The µTOSCA toolchain:
Mining, analysing, and refactoring microservice-based architectures

Speakers
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Abstract
Exploiting microservices to architect enterprise applications is becoming commonplace. This makes it crucial to provide some support for designing and analyzing microservice-based applications, for example, for understanding whether a microservice-based application adheres to the main design principles of microservices and for choosing how to refactor it when this is not the case. To provide such support, we present the µTOSCA toolchain. More precisely, we first introduce the µTOSCA model to represent the architecture of microservice-based applications with the OASIS standard TOSCA. We then describe a technique to automatically mine the architecture of a microservice-based application and represent it with µTOSCA, given the Kubernetes deployment of the application. We also present a methodology to analyze the µTOSCA representation of a microservice-based architecture to systematically identify the architectural smells potentially affecting the corresponding application and to resolve them.

Short Bio:
Antonio Brogi received the PhD degree in computer science from the University of Pisa, in 1993. He is a Full Professor at the Department of Computer Science of the University of Pisa (Italy) since 2004. His research interests include service-oriented, cloud and Cloud-IoT computing, coordination and adaptation of software elements, formal methods, and design of programming languages. He has published the results of his research in more than 250 papers in international journals and conferences.
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