Tuesday, August 26, 2014 (Half-day / morning)

TUTORIAL ANNOUNCEMENT

22nd IEEE International Requirements Engineering Conference (RE'14) – Karlskrona, Sweden – http://www.re14.org

Luciano Baresi

Liliana Pasquale

T09 – Requirements engineering for self-adaptive systems

Self-adaptation has become a key characteristic of many modern software systems to tackle their complexity and cope with the many environments in which they can operate. Self-adaptation is a requirement per-se, but it also impacts the other (conventional) requirements of the system; all these new and old requirements must be elicited and represented in a coherent and homogenous way. This tutorial aims to review existing approaches for engineering requirements of self-adaptive systems. Existing work will be classified depending on the typology of problems needing adaptation (e.g., satisfaction of functional, performance, reliability, and security requirements). Furthermore, the MAPE (Monitoring, Analysis, Planning, Execution) loop will be used as a reference framework to indicate the role played by requirements in the activities necessary to support self-adaptation. Finally, the tutorial will illustrate FLAGS (Fuzzy Live Adaptation Goals for Self-Adaptive Systems), which is a goal model aimed to represent the requirements of the system together with self-adaptation capabilities. The main elements of the FLAGS model will be demonstrated by using examples of two self-adaptive applications.

BIOGRAPHIES

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Luciano is an associate professor at Politecnico di Milano. He was also visiting researcher at University of Oregon at Eugene (USA) and University of Paderborn (Germany). Luciano was program co-chair of ICECCS, FASE, ICWE, ICSOC, SEAMS, and ESEC-FSE. He is currently on the editorial board of Springer Service Oriented Computing and Applications, ACM Transactions on Autonomous and Adaptive Systems, IEEE Transactions on Services Computing, and IEEE Transactions on Software Engineering. He received his Ph.D in computer science from Politecnico di Milano.

Liliana is post-doctoral researcher at Lero - the Irish Software Engineering Research Centre - at the University of Limerick since July 2011. She received her PhD in Computer Science from Politecnico di Milano in 2011 and was summer intern at IBM TJ Watson Research Center in 2008. Her main research interest is in software engineering and, in particular, in requirements engineering and self-adaptive software. Her work has mainly focused on using requirements at runtime to support a large set of complex adaptive systems, including service oriented applications, dynamic software product lines and secure cyber-physical systems. Liliana won the Best Student Paper Award at ICWS09 and the Best Poster Award at RE2013. She is also recipient of the IBM PhD Fellowship for the academic year 2010-2011 and of the Microsoft Azure Research Award.

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