ARAMIS
Automated engineeRing of Autonomic and run-tiMe evolvIng Systems

September 16th, 2008
L'Aquila, Italy
http://www.selab.isti.cnr.it/Aramis2008/

co-located with the 23rd IEEE/ACM International Conference on Automated Software Engineering (http://www.ase-conference.org/)

Workshop theme

Modern software-intensive systems are often large, continuously running applications, deployed on complex and geographically distributed environments. These systems are characterized by a high rate of changes and unexpected situations that must be dynamically and automatically handled. Changes and unexpected situations can have many sources: the need to dynamically add/remove features to accommodate new user requirements, the necessity to adapt to (physical and logical) context changes, the necessity to protect from failures and to automatically repair faults. Such needs introduce new challenges that cannot be addressed with traditional solutions; rather, they require the development of highly automated techniques. That is, automated techniques for managing, verifying and validating evolving at run-time systems, automated techniques for handling, overcoming and fixing system failures, and automated techniques for adaptation to context changes. The evolutionary nature of modern software-intensive applications makes infeasible a standard approach to (functional and extra-functional) verification and validation. The focus must move from validating and removing faults from design time to validating and healing evolving systems at run-time. While in static systems, quality assurance tasks like verification, validation, testing, debugging and fixing can be done once and for all before deployment, for systems changing at run-time they become a perpetual activity to be performed during system execution. Changes not only take place in applications, but also in the environment. Thus, suitable techniques for automatically capturing context changes and reasoning on context information to properly adapt to changing environment must be embedded into software systems. Applying such activities in the field imposes real-time requirements on the analysis techniques associated with them.

The ARAMIS workshop will provide a forum for scientists and engineers in academia and industry to present and discuss their latest research. ARAMIS will focus on issues, challenges, and future perspectives of techniques for automated verification and validation of evolving systems, for automatic context management and for the engineering of self-healing solutions.

Scope

The following constitutes the core list of the topics that form the focal point of the workshop. However, this list should not be considered as closed or technically restrictive for paper submissions. Topics of interest include:

- engineering of self-healing solutions
  - self-healing solutions for functional and nonfunctional faults
  - architectures for self-healing solutions
  - design for self-healing
  - model-based approaches to self-healing
  - automated debugging techniques
- automatic context management:

    - Context Definition: metamodeling and modeling, languages, ontologies, modeling tools.
    - Context Management: monitoring and changes detection.
    - Mechanism to adapt software systems to context changes.
    - Mechanisms for automated reasoning on context information.
    - MDE techniques for the development and QoS validation of context-aware software systems.
    - Multi-dimensional (QoS) models to support software system adaptation to the context changes.
- verification and validation of evolving systems:
    - challenges in automating v&v for evolving at run-time systems;
    - types of evolution;
    - the role of run-time modeling in v&v of evolving systems;
    - v&v of Service Oriented Architectures;
    - v&v of Self-* systems;
    - adaptation of existing v&v techniques to evolving at run-time systems;
    - relationship between compile-time and run-time adaptation;
    - reflection of system changes into the original model;
    - on-line testing of evolving at run-time systems;
    - monitoring at run-time;
    - fault tolerance assurance in evolving at run-time systems.

Types of contribution

Submissions must be original and should not be under consideration for publication elsewhere while being evaluated for this workshop. All papers will be peer-reviewed by at least three members of the international programme committee, to be assessed in terms of their relevance to the workshop topics, scientific and presentation quality, technical soundness and innovation. All submissions must be received electronically. Workshop submissions will be prepared using the ASE 2008 Submission Guidelines and must not exceed eight (8) pages. Informal proceedings, made electronically, will be available prior the workshop. Workshop proceedings will be published by a leading publisher. The final details are still negotiated.
One of the authors of each accepted paper has to present the paper at the workshop.

Important dates

Submission deadline: June 15, 2008
Notification of acceptance: July 15, 2008
Camera Ready: July 30, 2008

Program co-chairs

Mauro Caporuscio, INRIA Paris-Rocquencourt
Antinisca di Marco, University of L'Aquila
Leonardo Mariani, University of Milano Bicocca
Henry Muccini, University of L'Aquila
Andrea Polini, University of Camerino
Onn Shehory, IBM Haifa Reseach Lab

Contact details

For more information, pleas contact
Leonardo Mariani, mariani@disco.unimib.it
Henry Muccini, muccini@di.univaq.it