Special Issue Description

Software evolution and adaptation is a research area, as also the name states, subjects to continuous enhancements, that offers stimulating challenges for both academic and industrial researchers. The evolution of software systems, to face unexpected situations or just for improving their features, relies on software engineering techniques and methodologies that often require a complete system refactoring and code rewriting or a fast patch with an obvious loss in stability and availability of the related services. Unfortunately, similar approaches are not always applicable e.g., a stop cannot be imposed to a critique and nonstopable system, analogously code rewriting and refactoring cannot apply to systems whose code is not available.

Aspect-oriented software development is a young methodology that is steadily attracting attention within the community of object-oriented researchers and practitioners. The properties of transparency, separation of concerns, and extensibility supported by this methodology have largely been accepted as useful for software development and design. These characteristics provide the basic mechanisms for adapting (i.e., evolving) a system without directly altering the existing system. Moreover, aspect-oriented programming can simplify code instrumentation providing a few mechanisms, such as the join point model, that permit of evincing some points (join points) in the code or in the computation that can be modified by weaving new functionality (aspects) on them in a second time. Meta-data represent the glue between the system to be adapted and how this has to be adapted; the techniques that rely on meta-data can be used to inspect the system and to dig out the necessary data for designing the heuristic that the aspect-oriented mechanisms use for managing the evolution.

The objective of this special issue is to highlight the benefits brought by the use of aspect-oriented approaches in developing and in maintaining a software system that can evolve in an unanticipated way.

Topics

Every contribution that exploits aspect-oriented techniques to evolve software systems is welcome. As well as every contribution that proposes ad hoc extensions to the aspect-oriented methodology to support the software evolution. Specific topics of interest for the special issue include, but are not limited to:

- aspect-oriented middleware and environments for software evolution;
- extensions to the aspect-oriented methodology to support software evolution;
- adaptive software components and evolution as component composition;
- evolution planning and deployment through aspect oriented approaches;
- feature- and subject-oriented adaptation;
- aspect interference and composition for software evolution;
- unanticipated software evolution supported by aspect-oriented software development techniques;
- MOF, code annotations and other meta-data facilities for software evolution;
- software evolution tangling concerns;
- aspect-oriented refactoring techniques for software evolution;
- multi-dimensional separation of concerns for software evolution

Submissions

Original manuscripts (max 20-pages long) should follow LNCS formatting guidelines, and should be submitted as PDF or zipped PostScript files to:

taosd-se@dico.unimi.it

To ensure the high quality of the final issue, each submission will be reviewed by, at least, three referees.