# Workshop: Principles of Software Evolution

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The purpose of this workshop on the principles of software evolution is to provide a forum for discussing principles and fundamental aspects of software evolution. Software evolution is widely recognized as one of the most important problems in software engineering. Despite the significant amount of work that has been done, there are still fundamental problems to be solved. This is partly due to the inherent difficulties in software evolution, but also due to the lack of basic principles for evolving software systematically.

The workshop was organized by Bob Balzer (Information Science Institute), Carlo Ghezzi (Politecnico di Milano), Takuya Katayama (JAIST), Jeff Kramer (Imperial College), David Notkin (University of Washington), Dewayne Perry (Bell Laboratories), and Akinori Yonezawa(University of Tokyo). The workshop is organized in cooperation with the IEEE Computer Society, ACM SIGSOFT, the Japanese Society for Software Science and Technology, the Software Evolution Project supported by Ministry of Education of Japan, and the Software Development Methodology Project supported by JSPS.

The purpose of this workshop is to discuss principles and mechanisms for software evolution. Topics of interest include the following.

- principles of evolution:
  - theories of evolution
  - computational models
  - empirical study of evolution
  - principles of architectural, design, and implementation evolution
  - design methodologies for evolutionary system
- mechanisms to support evolution:
  - adaptation and reconfiguration
  - language and system constructs
  - processes, methods, tools and environments
  - analysis and reasoning
  - inconsistency management
  - change implication and propagation
  - evolution across families and versions
  - evolution in network/web-based development

We received 41 paper as submissions to the workshop. Of the 34 papers invited for the workshop, 25 were invited for presentation on the first day of the workshop. Preprints of the accepted papers are available to the participants of the workshop. The official proceedings are to be published after the workshop and will consist of a selection of papers (extended and expanded) from the position papers presented at the workshop.

The second day of the workshop consists of four discussion sessions that roughly partition the topics of the papers submitted.

- Session 1: Models and Theories (chaired by Katayama)
- Session 2: When Reality Strikes (chaired by Notkin)
- Session 3: Dynamic/Runtime Structures (chaired by Perry)
- Session 4: Doing Evolution (chaired by Balzer)

Summaries of the discussions will be presented in the proceedings. Further, some of the critical issues raised in the presentations and discussions will be discussed in the panel on “Critical issues in software evolution”.