

First International Workshop on the Modeling and Analysis of Concerns in Software (MACS 2005)

Martin P. Robillard
School of Computer Science
McGill University
Montréal, QC, Canada
martin@cs.mcgill.ca

Peri Tarr
IBM T.J. Watson Research Center
Hawthorne, NY, USA
tarr@us.ibm.com

ABSTRACT

Many software engineering activities are organized around the idea of concerns. Separation of concerns is a basic tenet of software engineering intended to facilitate the development and evolution of software systems. Unfortunately, separation of concerns is not always possible in practice, and concerns often end up scattered and tangled. The goal of the MACS workshop is to bring together researchers and practitioners with interest and experience in techniques for modeling and analyzing the realization of concerns in software systems.

Categories and Subject Descriptors

D.2.0 [Software Engineering]: General

General Terms

Algorithms, Documentation, Experimentation, Human Factors, Languages, Measurement, Verification

Keywords

Separation of concerns, software modeling, software analysis

1. WORKSHOP DESCRIPTION

Most software design, implementation, and modification activities are organized, explicitly or implicitly, around the idea of concerns. Concerns of interest during software engineering activities typically include features, non-functional requirements, low-level mechanisms (e.g., caching), and many other concepts. Programming language-supported constructs like modules, objects, and aspects enable the encapsulation of certain concerns. Unfortunately, because of the limitations of programming languages, structural degradation due to repeated changes, and the continual emergence of new issues, the code implementing concerns is often found to be scattered and tangled throughout the system. Studies and experience have shown that the scattering and tangling of concerns greatly increase the difficulty of evolving software in a correct and cost-effective manner.

Although relatively mature aspect-oriented programming technologies are now available that allow developers to encapsulate a greater number of concerns, many of the research questions that applied to object-oriented and procedural systems carry over to aspect-oriented systems: How can we efficiently discover how a concern is realized in a system? How can we explicitly capture and

preserve informal knowledge developers have about the realization of scattered concerns? How can we best represent scattered and tangled concerns to help developers understand and modify them? How can we (semi-)automatically refactor a scattered concern in its own function, object, or aspect? These and other questions have been the focus of research projects that have had significant visibility at recent software engineering conferences.

The goal of this workshop is to bring together researchers and practitioners with interest and experience in the development of techniques for modeling and analyzing concerns whose realization is scattered in the various artifacts composing a software system, and to explore the potential for integration and interoperability in concern analysis and modeling research.

2. AREAS OF INTEREST

Specific areas of interests for this workshop include:

- Concern modeling and representation structures and environments
- Concern analysis algorithms
- Automated and interactive approaches to concern location
- Visualization techniques and tools for scattered concerns
- Concern mining techniques
- Concern reverse engineering and concern understanding tools and techniques
- Concern refactoring and reengineering approaches

3. WORKSHOP ORGANIZATION

Co-chairs

Martin Robillard (McGill University, Canada)
Peri Tarr (IBM T.J. Watson Research Center, USA)

Program Committee

Siobhán Clarke (Trinity College, Ireland)
Yvonne Coady (University of Victoria, Canada)
David Coppit (The College of William and Mary, USA)
William Griswold (University of California, San Diego, USA)
Rainer Koschke (University of Bremen, Germany)
Juri Memmert (JPM Design, Germany)
Gail Murphy (University of British Columbia, Canada)
Harold Ossher (IBM T.J. Watson Research Center, USA)
Arie van Deursen (CWI and Delft University, The Netherlands)

Website

<http://www.cs.mcgill.ca/~martin/macs2005>