# IWPSE-EVOL 2011

## 12th International Workshop on Principles on Software Evolution and
## 7th ERCIM Workshop on Software Evolution

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## ABSTRACT

The IWPSE-EVOL 2011 workshop is the merger of the 12th International Workshop on Principles of Software Evolution (IWPSE) and the 7th annual ERCIM Workshop on Software Evolution (EVOL). The objectives of this joint event is to provide a forum to discuss a wide range of topics in software evolution, to foster the better understanding of the nature of software evolution, and to accelerate research activities on the subject.

## Categories and Subject Descriptors

D.2.7 [**Software Engineering**]: Distribution, Maintenance, and Enhancement

## General Terms

Algorithms, Theory, Measurement, Human Factors

## Keywords

Software maintenance, software evolution

## 1. INTRODUCTION

Research in software evolution and evolvability has been thriving in the past years, with a constant stream of new formalisms, tools, techniques, and development methodologies trying, on the one hand, to facilitate the way long-lived successful software systems can be changed in order to cope with demands from users and the increasing complexity and volatility of the contexts in which such systems operate, and, on the other hand, to understand and if possible control the processes by which demand for these changes come about.

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This year's edition of IWPSE-EVOL is held in conjunction with ESEC/FSE, the joint meeting of the European

Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering, as it has been the case multiple times in the past, most recently in 2005, 2007, and 2009. The IWPSE and EVOL workshops have been held together since 2009.

## 2. TOPICS OF INTEREST

Topics of interest of this joint event include, among others:

- Application areas: distributed, embedded, real-time, ultra large scale, and self-adaptive systems, web services, mobile computing, information systems, systems of systems, etc.

- Paradigms: support and barriers to evolution in aspect-oriented, agile, component-based, and model-driven software development, service-oriented architectures,etc.

- Technical aspects: co-evolution and inconsistency management, impact analysis and change propagation, dynamic reconfiguration and updating; architectures, tools, languages and notations for supporting evolution, etc.

- Managerial aspects: effort and cost estimation, risk analysis, software quality, productivity, process support, training, awareness, etc.

- Empirical studies related to software evolution.

- Mining software repositories approaches and techniques supporting software evolution.

- Industrial experience on successes and failures related to software evolution.

- Interdisciplinary approaches: adaptation of evolutionary concepts and measures from other disciplines (biology, geology, etc.) to software evolution.

- Theories and models to explain and understand software evolution.

## 3. WORKSHOP OVERVIEW

The IWPSE-EVOL 2011 workshop has attracted 37 submissions from 87 authors. The 27 program committee members and 16 external reviewers selected 17 submissions for presentation and publication. The accepted submissions include 9 full research papers, 6 short or position papers, and 2 tool demonstration paper. The acceptance rate for full research papers was 42%.

## Accepted papers

*Full papers*

- *A Taxonomy for Impact Analysis and Change Prediction to Support Software Evolution*, by Steffen Lehnert.

- *An agent-based framework for distributed collaborative model evolution*, by Hoa Khanh Dam and Aditya Ghose.

- *Causes of Premature Aging during Software Development: An Observational Study*, by Mathieu Lavallee and Pierre Robillard.

- *Network Analysis of OSS evolution: An Empirical Study on ArgoUML Project*, by Wen Zhang.

- *Problem-Solution Mapping for Forward and Reengineering on Architectural Level*, by Matthias Riebisch, Stephan Bode and Robert Brcina.

- *Run-time Phenomena in Dynamic Software Updating: Causes and Effects*, by Allan Gregersen and Bo Jorgensen.

- *Towards A Benchmark for Traceability*, by Eya Ben Charrada, David Caspar, Cédric Jeanneret and Martin Glinz.

- *Towards a Classification of Logical Dependencies Origins: A Case Study*, by Gustavo Ansaldi Oliva, Francisco Santana, Marco Gerosa and Cleidson De Souza.

- *User generated (web) content: trash or treasure*, by Giovanni Alluvatti, Andrea Capiluppi, Giuseppe De Ruvo and Marco Molfetta.

*Short papers*

- *Are the classes that use exceptions defect prone?*, by Cristina Marinescu.

- *Challenges in Model-Based Evolution and Merging of Access Control policies*, Lionel Montrieux, Michel Wermelinger and Yijun Yu.

- *Challenges of Evolving Sequential to Parallel Code: An Exploratory Study*, by Anne Meade and J.J. Collins.

- *Measuring Multi-language Software Evolution: A Case Study*, by Tom Arbuckle.

- *Requirements evolution drives software evolution*, by Neil A. Ernst and John Mylopoulos.

- *Using the Gini Coefficient for Bug Prediction in Eclipse*, by Emanuel Giger, Martin Pinzger and Harald Gall.

*Tool demonstration papers*

- *An Editing-operation Replayer with Highlights Supporting Investigation of Program Modifications*, by Takayuki Omori and Katsuhisa Maruyama.

- *Historage: Fine-grained Version Control System for Java*, by Hideaki Hata, Osamu Mizuno and Tohru Kikuno.

## Keynote talk

The workshop program also features a keynote talk by an internationally recognized expert in software engineering, software maintenance and evolution: Prem Devanbu. Prem will talk about his latest research developments in Mining Software Repositories, an area which has a lot of overlap with Software Evolution.

## A tribute to Manny Lehman

The 2011 edition of IWPSE-EVOL is dedicated to the memory of Prof. Meir M. "Manny" Lehman, who sadly passed away in December 2010. Manny Lehman was known as the "*Father of software evolution*", since his seminal work with Les Belady on the development of IBMŠs `OS/360`. Their early empirical studies gave birth to the widely known *Laws of Software Evolution*. Manny was also recognized by the software engineering community at large, being program co-chair of the 4th ICSE in 1975, and general chair of the 8th ICSE in 1985.

## Special issue

IWPSE-EVOL 2011 will be associated with a post-event special issue of JSME, the *Journal of Software Maintenance and Evolution: Research and Practice*, published by Wiley. The theme of this special issue will be "*Laws, Principles and Theories of Software Evolution*".

## 4. ACKNOWLEDGMENTS