Fifth International Workshop on Software Clones (IWSC 2011)

James R. Cordy
Queen’s University, Canada
cordy@cs.queensu.ca

Katsuro Inoue
Osaka University, Japan
inoue@ist.osaka-u.ac.jp

Stanislaw Jarzabek
National University of Singapore, Singapore
dcssj@nus.edu.sg

Rainer Koschke
University of Bremen, Germany
koschke@informatik.uni-bremen.de

ABSTRACT
Software clones are identical or similar pieces of code, design or other artifacts. Clones are known to be closely related to various issues in software engineering, such as software quality, complexity, architecture, refactoring, evolution, licensing, plagiarism, and so on. Various characteristics of software systems can be uncovered through clone analysis, and system restructuring can be performed by merging clones.

The goals of this workshop are to bring together researchers and practitioners from around the world to evaluate the current state of research and applications, discuss common problems, discover new opportunities for collaboration, exchange ideas, envision new areas of research and applications, and explore synergies with similarity analysis in other areas and disciplines.

Categories and Subject Descriptors
D.2.m [Software Engineering]: Miscellaneous—code clones;
D.2.7 [Software Engineering]: Distribution, Maintenance, and Enhancement; D.2.8 [Software Engineering]: Metrics

General Terms
Measurement, Experimentation

Keywords
software maintenance, reverse engineering, clone detection, software clones

1. INTRODUCTION
Beginning in 2002, the first edition of the International Workshop on Detection of Software Clones, this community began to form itself and to find ways to meet and collaborate. In November 2003, the Second International Workshop on Software Clones held at WCRE 2003 saw a broadening of its scope and participant background. Six years later, in March 2009, the number of participants of the Third International Workshop on Software Clones (held in conjunction with CSMR 2009) confirmed the interest that code clone research attracts. In recognition of the relevance of clones to the broader software engineering research community, in May 2010 the Fourth International Workshop on Software Clones became an ICSE workshop for the first time at ICSE 2010 in Cape Town.

The primary aims of the workshop are to:
- provide a common forum for software clone research and applications
- bring together researchers and practitioners in the field
- clarify and assess the current state of research
- discuss common problems and emerging research directions
- exchange ideas, explore and envision new applications and new areas of research
- discuss and exchange new empirical results, new insights and new approaches
- discover new opportunities for collaboration
- establish a list of new emerging research directions

The expected outcome is a list of open issues that should be addressed in the near future and concrete plans on how to conduct research to address these issues.

2. WORKSHOP THEMES
This workshop is intended as a discussion forum where original and innovative ideas can be openly presented, criticized and refined. It is an explicit goal of this workshop to focus on novel and forward-looking ideas as well as experience and practical applications.

Relevant topics include, but are not limited to:
- Definition of software clones
- Types, distribution, and nature of clones in software
- Causes and effects of clones
- Techniques and algorithms for clone detection, analysis, and management
- Clone and clone pattern visualization
- Tools and systems for detecting and analyzing clones
- Applications of clone analysis
- Clone management
- System architecture and clones
- Effect of clones on system complexity and quality
- Clone analysis in families of similar systems
- Industrial experiences
- Measures of code similarity
- Economic and trade-off models for clone removal
- Evaluation and benchmarking of detection methods
- Licensing and plagiarism issues
- Clone-aware software design and development
- Refactoring through clone analysis
• Raising the level of clone detection and analysis (higher-level clones in models and designs)

And, as a particular focus for IWSC 2011:
• Clone evolution and variation
• Role of clones in software system evolution

Three kinds of papers were sought. Full papers should present novel research ideas and open issues, significant experiences, empirical studies, or important viewpoints on the field. Short position papers are designed to raise new ideas and issues, emphasizing originality and potential to stimulate active discussion. Finally, tool demonstration papers introduce a relevant practical tool and its use.

3. WORKSHOP FORMAT

The workshop will cover a full day of presentations and discussions. Each session will begin with three or four presentations on related topics, followed by an open discussion of the issues raised moderated by the session chair. The discussion will be seeded by questions raised by the presenters, who form the discussion panel. Each presenter is asked to pose the one most important question raised by his or her work, and the question is put to the audience and other panel members for comment (or solution).

4. WORKSHOP ORGANIZATION

Workshop co-organizers
• James R. Cordy, Queen’s University, Canada
• Katsuro Inoue, Osaka University, Japan
• Stanisław Jarzabek, National University of Singapore
• Rainer Koschke, University of Bremen, Germany

Program Committee
• Giuliano Antoniol (Ecole Polytechnique de Montréal)
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• Chanchal K. Roy (University of Saskatchewan)
• Andrew Walenstein (University of Louisiana at Lafayette)
• Xing Zhenchang (National University of Singapore)

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5. ACCEPTED PAPERS

This year’s workshop received a total of 23 submissions. All submissions were formally reviewed by at least three members of the program committee according to the criteria outlined above, and following a round of open discussion the following papers were accepted for the workshop.

5.1 Full Papers


5.2 Position Papers


5.3 Tool Demonstrations