

Fourth International Workshop on Software Clones (IWSC)

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ABSTRACT

Software clones are identical or similar pieces of code. They are often the result of copy-and-paste activities as ad-hoc code reuse by programmers. Software clones research is of high relevance for the industry. Many researchers have reported high rates of code cloning in both industrial and open-source systems.

In this workshop we will explore lines of research that evaluate code clone detection methods, reason about ways to remove clones, assess the effect of clones on maintainability, track clones' evolution, and investigate the root causes of clones.

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

Keywords

Code clone detection, software clone, software maintenance

Introduction

Beginning in 2002, the first edition of the *International Workshop on Detection of Software Clones*, this community has started to form itself and to find ways to meet and collaborate.

In November 2003, the *Second International Workshop on Software Clones* held in conjunction with *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 the code clone research attracts.

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The purpose of this workshop is to solidify and give shape to this research area and community. Its primary aims are to bring together researchers and practitioners within the field in order to clarify and assess the current state of research, establish a list of new emerging research directions, discover new opportunities for collaboration, and exchange ideas and envision new areas of research, applications, and approaches.

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 the issues.

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. This include research in its early stage of development, and even just concepts or opinions.

Relevant topics include, but are not limited to,

- Definition of software (code) clones
- Types, distribution, and nature of clones in software systems
- Causes and effects of clones
- Techniques and algorithms for clone detection, analysis, and management
- Clones and clone patterns visualization
- Tools and systems for detecting and analyzing software clones
- Applications of clone analysis
- Clone management
- System architecture and clone
- Effect of clones to system complexity and quality
- Industrial experiences with clone management
- Measures of code similarity
- Cost/economic and trade-off models for clone removal
- Evaluation and benchmarking of clone detection methods
- Evolution of clones
- Licensing and plagiarismeissues
- Clone-aware software design and development
- Refactoring through clone analysis
- Raising the granularity/abstraction level of clone detection and analysis (high-level clone)

Workshop Format

The workshop will cover one day of presentations and discussions.

During the workshop, there will be four sessions. Each session will have full and position paper presentations followed by discussion.

Workshop Organization

Workshop co-organizers

- Katsuro Inoue, Osaka University, Japan
- James R. Cordy, Queen's University, Canada
- Stanislaw Jarzabek, National University of Singapore
- Rainer Koschke, University of Bremen, Germany

Program Committee

- Andrew Walenstein (University of Louisiana at Lafayette)
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- Katsuro Inoue (Osaka University)
- Masafumi Katahira (Japan Aerospace Exploration Agency)
- Massimiliano Di Penta (University of Sannio)
- Michel Wermelinger (The Open University)
- Mike Godfrey (University of Waterloo)
- Miryung Kim (University of Texas at Austin)
- Rainer Koschke (University of Bremen)
- Stanislaw Jarzabek (National University of Singapore)
- Toshihiro Kamiya (AIST)
- Xing Zhenchang (National University of Singapore)

Acknowledgments

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Accepted Papers

Full Papers

- [1] Angela Lozano and Michel Wermelinger. Tracking clones' imprint. In *Proc. Fourth International Workshop on Software Clones, IWSC, 2010*.
- [2] Chanchal K. Roy and James Cordy. Are Scripting Languages Really Different? In *Proc. Fourth International Workshop on Software Clones, IWSC, 2010*.
- [3] Elmar Juergens and Nils Göde. Achieving Accurate Clone Detection Results. In *Proc. Fourth International Workshop on Software Clones, IWSC, 2010*.
- [4] Ferosh Jacob, Daqing Hou and Patricia Jablonski. Actively Comparing Clones Inside The Code Editor. In *Proc. Fourth International Workshop on Software Clones, IWSC, 2010*.
- [5] Florian Deissenboeck, Benjamin Hummel, Elmar Juergens, Michael Pfahler and Bernhard Schaetz. Model Clone Detection in Practice In *Proc. Fourth*

International Workshop on Software Clones, IWSC, 2010.

- [6] Jens Krinke, Nicolas Gold, Yue Jia and David Binkley. Distinguishing Copies from Originals in Software Clones. In *Proc. Fourth International Workshop on Software Clones, IWSC, 2010*.
- [7] Nils Göde. Clone Removal: Fact or Fiction? In *Proc. Fourth International Workshop on Software Clones, IWSC, 2010*.
- [8] Norihiro Yoshida, Takeshi Hattori and Katsuro Inoue. Finding Similar Defects Using Synonymous Identifier Retrieval. In *Proc. Fourth International Workshop on Software Clones, IWSC, 2010*.
- [9] Thierry Lavoie, Michael Eilers-Smith and Ettore Merlo. Challenging cloning related problems with GPU-based algorithms. In *Proc. Fourth International Workshop on Software Clones, IWSC, 2010*.

Position Papers

- [1] Ian Davis and Michael Godfrey. Clone Detection by Exploiting Assembler. In *Proc. Fourth International Workshop on Software Clones, IWSC, 2010*.
- [2] Jan Harder and Nils Göde. Quo Vadis, Clone Management? In *Proc. Fourth International Workshop on Software Clones, IWSC, 2010*.
- [3] Marco Funaro, Daniele Braga, Alessandro Campi and Carlo Ghezzi. Combining syntactic and textual approach in clone detection. In *Proc. Fourth International Workshop on Software Clones, IWSC, 2010*.
- [4] Michel Chilowicz, Etienne Duris and Gilles Roussel. Towards a multi-scale approach for source code approximate match report. In *Proc. Fourth International Workshop on Software Clones, IWSC, 2010*.
- [5] Nicolas Gold, Jens Krinke, Mark Harman and Dave Binkley. Issues in Clone Classification for Dataflow Languages. In *Proc. Fourth International Workshop on Software Clones, IWSC, 2010*.
- [6] Nikolaus Schwarz, Erwann Wernli and Adrian Kuhn. Hot Clones: a Shotgun Marriage of Search-Driven Development and Clone Management. In *Proc. Fourth International Workshop on Software Clones, IWSC, 2010*.
- [7] Stan Jarzabek and Yixing Xue. Are Clones Harmful for Maintenance? In *Proc. Fourth International Workshop on Software Clones, IWSC, 2010*.
- [8] Toshihiro Kamiya. Classifying Code Clones with Configuration. In *Proc. Fourth International Workshop on Software Clones, IWSC, 2010*.
- [9] Yoshiki Higo, Kensuke Tanaka and Shinji Kusumoto. Toward Identifying Inter-project Clone Sets. In *Proc. Fourth International Workshop on Software Clones, IWSC, 2010*.