2010 10th IEEE Working Conference on Source Code Analysis and Manipulation

(SCAM 2010)

Timisoara, Romania
12 – 13 September 2010
Message from the Chairs ................................................................................................................................................... vii
Organizing Committee ........................................................................................................................................................... ix
Steering Committee .................................................................................................................................................................. x
Program Committee ................................................................................................................................................................ xi
Additional Reviewers ................................................................................................................................................................ xii

Invited Talks

Learning from 6,000 Projects: Mining Models in the Large .............................................................................................................................. 3
   Andreas Zeller
Why Source Code Analysis and Manipulation Will Always be Important .............................................................. 7
   Mark Harman

Measurement

Subclass Instantiation Distribution ............................................................................................................................................. 23
   Amy Wheeler and Dave Binkley
New Conceptual Coupling and Cohesion Metrics for Object-Oriented Systems .......................................................... 33
   Béla Újházi, Rudolf Ferenc, Denys Poshyvanyk, and Tibor Gyimóthy
Deriving Coupling Metrics from Call Graphs ........................................................................................................... 43
   Simon Allier, Stéphane Vaucher, Bruno Dufour, and Houari Sahraoui

Concepts

Validating the Use of Topic Models for Software Evolution ........................................................................................................ 55
   Stephen W. Thomas, Bram Adams, Ahmed E. Hassan, and Dorothea Blostein
Estimating the Optimal Number of Latent Concepts in Source Code Analysis .......................................................... 65
   Scott Grant and James R. Cordy
# Clones
Language-Independent Clone Detection Applied to Plagiarism Detection .................................................................77
  *Romain Brixtel, Mathieu Fontaine, Boris Lesner, Cyril Bazin, and Romain Robbes*
Evaluating Code Clone Genealogies at Release Level: An Empirical Study .................................................................87
  *Ripon K. Saha, Muhammad Asaduzzaman, Minhaz F. Zibran, Chanchal K. Roy, and Kevin A. Schneider*

# Demos
The Fika Parser Generator ...............................................................................................................................................99
  *Michal Píše*
AMBIDEXTER: Practical Ambiguity Detection ................................................................................................................101
  *Bas Basten and Tijs van der Storm*

# Static Analysis Using Graphs
Speeding Up Context-, Object- and Field-Sensitive SDG Generation .............................................................................105
  *Jürgen Graf*
How Good is Static Analysis at Finding Concurrency Bugs? .........................................................................................115
  *Devin Kester, Martin Mwebesa, and Jeremy S. Bradbury*
Parallel Reachability and Escape Analyses ..................................................................................................................125
  *Marcus Edvinsson, Jonas Lundberg, and Welf Löwe*
Effective Static Analysis to Find Concurrency Bugs in Java .........................................................................................135
  *Zhi Da Luo, Linda Hillis, Raja Das, and Yao Qi*

# Modularity
Encapsulating Software Platform Logic by Aspect-Oriented Programming: A Case Study in Using Aspects for Language Portability ........................................................................................................147
  *Lennart C.L. Kats and Eelco Visser*
Refactoring Support for Modularity Maintenance in Erlang ............................................................................................157
  *Huiqing Li and Simon Thompson*
Visualization of C++ Template Metaprograms ..........................................................................................................167
  *Zoltán Borók-Nagy, Viktor Májer, József Mihalicza, Norbert Pataki, and Zoltán Porkoláb*

# Data and Memory
Reconstruction of Composite Types for Decompilation ................................................................................................179
  *Katerina Troshina, Yegor Derevenets, and Alexander Chernov*
Recovering the Memory Behavior of Executable Programs ............................................................................................189
  *Alain Ketterlin and Philippe Claus*
MemSafe: Ensuring the Spatial and Temporal Memory Safety of C at Runtime .......................................................199
  *Matthew S. Simpson and Rajeev K. Barua*

# Author Index
..................................................................................................................................................................................209

# vi