Program of the 23rd IEEE International Conference on Program Comprehension
— Monday, May 18 —

Welcome from the Chairs
Mon, May 18, 08:45 - 9:00
Room: Sala Verde
Andrea De Lucia, Christian Bird, Rocco Oliveto

Keynote
Mon, May 18, 09:00 - 10:30
Room: Sala Verde
Test Complement Exclusion: Guarantees from Dynamic Analysis
Andreas Zeller (Saarland University, Germany)
Modern test generation techniques allow to generate as many executions as needed; combined with dynamic analysis, they allow for understanding program behavior in situations where static analysis is challenged or impossible. However, all these dynamic techniques would still suffer from the incompleteness of testing: If some behavior has not been observed so far, there is no guarantee that it may not occur in the future. In this talk, I introduce a method called Test Complement Exclusion that combines test generation and sandboxing to provide such a guarantee. Test Complement Exclusion will have significant impact in the security domain, as it effectively detects and protects against unexpected changes of program behavior; however, guarantees would also strengthen findings in dynamic software comprehension. First experiments on real-world ANDROID programs demonstrate the feasibility of the approach.

Andreas Zeller is a full professor for Software Engineering at Saarland University in Saarbrücken, Germany, since 2001. His research concerns the analysis of large software systems and their development process. In 2010, Zeller was inducted as Fellow of the ACM for his contributions to automated debugging and mining software archives, for which he also was awarded 10-year impact awards from ACM SIGSOFT and ICSE. In 2011, he received an ERC Advanced Grant, Europe’s highest and most prestigious individual research grant, for work on specification mining and test case generation. In 2013, Zeller co-founded Testfabrik AG, a start-up on automatic testing of Web applications, where he chairs the supervisory board.

Coffee Break
Mon, May 18, 10:30 - 11:00

Mining Software Repositories
Mon, May 18, 11:00 - 12:30
Room: Sala Verde
Session Chair: Andy Zaidman

Discovering Loners and Phantoms in Commit and Issue Data
Gerald Schermann, Martin Brandtner, Sebastiano Panichella, Philipp Leitner, Harald Gall

Detection of Software Evolution Phases Based on Development Activities
Omar Benomar, Hani Abdeen, Houari Sahraoui, Pierre Poulin, Mohamed Aymen Sailed

I Know What You Did Last Summer - An Investigation of How Developers Spend Their Time
Roberto Minelli, Andrea Mocci, Michele Lanza

RCLinker: Automated Linking of Issue Reports and Commits Leveraging Rich Contextual Information
Tien-Duy B. Le, Mario Linares Vasquez, David Lo, Denys Poshyvanyk

Generating Reproducible and Replayable Bug Reports from Android Application Crashes
Martin White, Mario Linares Vasquez, Peter Johnson, Carlos Bernal-Cardenas, Denys Poshyvanyk

Active Semi-Supervised Defect Categorization
Ferdian Thung, Le Dinh Xuan Bach, David Lo

Lunch
Mon, May 18, 12:30 - 14:00
Learning and Sharing Program Knowledge  
Mon, May 18, 14:00 - 15:30  
Room: Sala Verde  
Session Chair: Denys Poshyvanyk

Could We Infer Unordered API Usage Patterns only using the Library Source Code?  
Mohamed Aymen Saied, Hani Abdeen, Omar Benomar, Houari Sahraoui

Searching the State Space: A Qualitative Study of API Protocol Usability  
Joshua Sunshine, James Herbsleb, Jonathan Aldrich

Synonym Suggestion for Tags on Stack Overflow  
Stefanie Beyer, Martin Pinzger

Code, Camera, Action: How Software Developers Document and Share Program Knowledge Using YouTube  
Laura MacLeod, Margaret-Anne Storey, Andreas Bergen

Generating Refactoring Proposals to Remove Clones from Automated System Tests  
Benedikt Hauptmann, Sebastian Eder, Maximilian Junker, Elmar Juergens, Volkmar Woinke

Framework Instantiation Using Cookbooks Constructed With Static and Dynamic Analysis (ERA paper)  
Raquel Lafeta, Marcelo Almeira Maia, David Röthlisberger

Coffee Break  
Mon, May 18, 15:30 - 16:00

Tool Demo Session  
Mon, May 18, 16:00 - 17:00  
Room: Sala Verde  
Session Chairs: Bram Adams, Sonia Haiduc

VerXCombo: An interactive data visualization of popular library version combinations  
Yuki Yano, Raula Gaikovina Kula, Takashi Ishio, Katsuro Inoue

ITMViz: Interactive Topic Modeling for Source Code Analysis  
Amir Saeidi, Jurriaan Hage, Ravi Khadka, Slinger Jansen

ExceptionTracer: A Solution Recommender for Exceptions in an Integrated Development Environment  
Vahid Amintabar, Abbas Heydarnoon, Mohammad Ghafari

Limpio - Lightweight MPI instrumentation  
Milan Pavlovic, Milan Radulovic, Alex Ramirez, Petar Radojkovic

Social Event and Award  
Mon, May 18, 17.30

Most Influential Paper  
Tue, May 19, 08:30 - 09:30  
Room: Sala Verde  
Session Chairs: Christian Bird, Rocco Oliveto

Industry Session  
Tue, May 19, 09:30 - 10:30  
Room: Sala Verde  
Session Chair: Cristina Marinescu

Fault Localization during System testing  
Pavan Kumar Chittimalli, Vipul Shah

Recovering Workflows from Functional Tests  
Chetan Khadke, Sunjit Rana, Vipul Shah

Reordering Results of Keyword-based Code Search for Supporting Simultaneous Code Changes  
Yusuke Sabi, Hiroaki Murakami, Yoshihi Higo, Shinji Kusumoto

Coffee Break  
Tue, May 19, 10:30 - 11:00

Users, User Interfaces, and Feature Location  
Tue, May 19, 11:00 - 12:30  
Room: Sala Verde  
Session Chair: Gabriele Bavota

Two User Perspectives in Program Comprehension: End Users and Developer Users  
Tobias Roehm

Exploring the Use of Concern Element Role Information in Feature Location Evaluation  
Emily Hill, David Shepherd, Lori Pollock

Rethinking User Interfaces for Feature Location  
Fabian Beck, Bogdan Dit, Jaleo Velasco-Madden, Daniel Weiskopf, Denys Poshyvanyk

Detecting Clones in Android Applications through Analyzing User Interfaces  
Charlie Soh, Hee Beng Kuan Tan, Youhen Leanidovich Arnatovich, Lipo Wang

Manually Locating Features in Industrial Source Code: The Search Actions of Software Nomads (ERA paper)  
Howell Jordan, Jacek Rosik, Sebastian Herold, Goetz Bottenweck, Jim Buckley

From Obfuscation to Comprehension (ERA paper)  
Eran Avidan, Dror Feitelson

The Plague Doctor: A Promising Cure for the Window Plague (ERA paper)  
Roberto Minelli, Andrea Mocco, Michele Lanza
Lunch  
Tue, May 19, 12:30 - 14:00

Large Scale Empirical Studies  
Tue, May 19, 14:00 - 15:30  
Room: Sala Verde  
Session Chair: Michael Collard

Polymorphism in the Spotlight: Studying its Prevalence in Java and Smalltalk  
Nevena Milojković, Andrea Caracciolo, Mircea Lungu, Oscar Nierstrasz, David Röthlisberger, Romain Robbes

A Survey of the Forms of Java Reference Names  
Simon Butler, Michel Wermelinger, Yijun Yu

Make It Simple - An Empirical Analysis of GNU Make Feature Use in Open Source Projects  
Douglas H. Martin, James R. Cordy, Bram Adams, Giulio Antoniol

License Usage and Changes: A Large-Scale Study of Java Projects on GitHub  
Christopher Vendome, Mario Linares Vasquez, Gabriele Bavota, Massimiliano Di Penta, Daniel German, Denys Poshvanyk

Unsupervised Software Categorization using Bytecode  
Javier Escobar Avila, Mario Linares Vasquez, Sonia Haiduc

The Last Line Effect (ERA paper)  
Moritz Beller, Andy Zaidman, Andrey Karpov

Coffee Break  
Tue, May 19, 15:30 - 14:00

Reading and Visualization  
Tue, May 19, 15:30 - 17:05  
Room: Sala Verde  
Session Chair: Emily Hill

How Programmers Read Regular Code: A Controlled Experiment Using Eye Tracking  
Ahmad Jbara, Dror Feitelson

Eye Movements in Code Reading: Relaxing the Linear Order  
Teresa Busjahn, Roman Bednarik, Andrew Begel, Martha Crosby, James H. Paterson, Carsten Schulte, Bonita Sharif, Sascha Tamm

Comparing Trace Visualizations for Program Comprehension through Controlled Experiments  
Florian Fittkau, Santje Finke, Wilhelm Hasselbring, Jan Waller

Towards Visual Reflexion Models (ERA paper)  
Marcello Romanelli, Andrea Mocci, Michele Lanza

Understanding Web Applications Using Component Based Visual Patterns (ERA paper)  
Dan C. Cosma, Petru F. Mihancea

ICPC 2015 Closing  
Tue, May 19, 17:05 - 17:15  
Room: Sala Verde

Open SC Meeting with ICPC 2016 Presentation  
Tue, May 19, 17:15  
Room: Sala Verde