Student Conference 2015

Publication Process

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(based on slides by Christian Kästner)
Conference vs. Journal

• Journal
  – More (long-term) impact
  – Wider target audience
  – Deeper reviews, long review process
  – More space
  – Typically research results of 1-5 years

• Conference Proceedings
  – Faster process
  – ca. 10 pages
  – Direct contacts and discussion at conferences; community
  – Audience: 30-200

• Workshop
  – Discussions; Community
  – Work in progress, ideas, first results
  – Audience: 10-20

Rankings:
http://people.engr.ncsu.edu/txie/seconferences.htm
http://core.edu.au/index.php/categories/conference%20rankings/1
http://www.cse.chalmers.se/~feldt/advice/isi_listed_se_journals.html
Rooms
Prepare for a large room
Prepare for a very large room
Workshop Room
Poster Session
Extracting Interactions in Component-Based Systems

Trevor Parsons, Adrian Mos, Mireia Trofn, Thomas Gachelder, Member, IEEE, and John Murphy, Senior Member, IEEE

Abstract—Monitoring, analyzing, and understanding component-based enterprise software systems is challenging. These tasks are essential to solving and preventing performance and quality problems. Obtaining consistent, local measures that show the relationships between different software entities is a particularly difficult task. This paper focuses on component-based frameworks, currently widely used by the industry. The paper presents a range of software engineering techniques to identify and measure inter-component interactions. For each approach, we describe the needs it addresses and the technical requirements for building an implementation of the approach. We also take a critical look at the different available implementations of the various techniques presented. We give performance and functional comparisons of our techniques and compare them against each other by building different inter-component interaction extraction tools.

Index Terms—Component-based systems, component interaction, extraction, modeling, tooling.

1 Introduction

Component-based enterprise applications are very often large and complex systems, made up of a multitude of different software components that communicate to service client requests. With such systems (which are common built using enterprise component frameworks), it can be difficult to understand how exactly particular components interact at runtime. This can lead to a lack of overall system understanding, which, in turn, can manifest itself in a range of different problems (e.g., incorrect performance tuning, maintainability issues, etc.).

Component-based interactions (CLIs) capture component communication that can be measured as the program executes (i.e., at runtime) or beforehand (i.e., virtually). While dynamic techniques can be limited by the input data, they have the advantage of recording the actual interactions that occur during execution. Static techniques, on the other hand, can be used to deduce all potential paths through the system. Thus, it is important that we have techniques available to facilitate analysis whenever we can record both static and dynamic traces.

The availability of an application's CLIs or potential interactions is in fact important in many different situations, ranging from optimizing a simple program to reverse engineering or monitoring an entire application. For example, when performing program optimizations, we need to know at least how frequently a component is invoked and under what circumstances. For reverse engineering, it is imperative to know which component can be invoked from which other component. It is also often the case that this information would enhance data already provided by certain tools. For example, very often, performance problems are tied to different components that make up a system (e.g., resource consumption information). However, it is common that no contextual information is given as to how the components work together to serve the different use cases.

This paper covers dynamic techniques for collecting component interactions. It presents a number of different approaches for capturing CLIs, describing which one is most appropriate while at the same time giving the advantages and disadvantages of each. We believe the presented options cover the full range of the current state of the art for such techniques.

The remainder of the paper is structured as follows: Section 2 details applications of CLIs and a number of different ways in which CLIs can be represented, discussing the advantages and disadvantages of each representation. A prerequisite for dynamic interaction extraction is the ability to record intercomponent calls at runtime. This is achieved through instrumentation of the application and is discussed in Section 3. Section 4, 5, and 6 outline the various options available for dynamic CLI extraction. For each technique presented, we outline the various requirements that are needed in order to implement the approach for the Java component technology, the Java Enterprise Edition.
A Scientific Conference

• Organization, Chairs, Proposal, Finances, Sponsors
• Conference vs. Workshop vs. Posters
• Call for Papers
• Program Committee, Reviews, Program
• Camera Ready Paper, Proceedings
• Conference, Travel, Venue, Registration, Sessions, Social Events
Call for Paper (CfP)

• Topic/Theme of the conference
• Date and location
• Topics of interest
• How to submit (when, which format, how many pages)
• Review process and evaluation criteria (program committee)
11th International Software Product Line Conference
Sept. 10-14, 2007, Kyoto Japan

Submission Deadlines
Paper submission (firm!) Feb 28, 2007
Author notification Apr 19, 2007
Camera ready paper deadline (firm!) Apr 30, 2007

With SPLC 2007, *the* premier forum for practitioners, researchers and educators to present and discuss the most recent ideas, innovations, trends, experiences, and concerns in the area software product lines and software product family engineering comes to Asia for the first time.

The objective is to continue the dialogue between software product line practitioners and researchers on the benefits, obstacles, and weaknesses of applying software product line principles, techniques, methods, processes, and tools in an industrial or organizational setting.
Scope
Topics of interest of SPLC 2007 include, but are definitely not restricted to:
• Industrial experiences in product line engineering
• Techniques and tools for product line engineering
• Evolution of product line assets
• Business issues for product lines
• Organizational and process issues for product lines
• Product line life-cycle issues

RESEARCH PAPERS describe original research contribution (theoretical, conceptual) to the field of software product line engineering. A research paper should clearly describe the problem that has been tackled, the state of the art with respect to the problem, the solution that is suggested and the potential -- or even better the evaluated -- benefits of the contribution.

We also call for short research papers, which are intended to report ideas in their early stages, and are not required to show complete/evaluated result.
Review Process
At least three members of the SPLC 2007 program committee will review each submission. The reviews will be the basis for making final decisions about which submissions to accept for presentation at the conference.

Accepted Submissions
Each accepted paper submission will be allotted a maximum of ten pages (full papers) or six pages (short papers) in the conference proceedings. The final version of accepted papers must conform to the proceedings publication format.

Authors are required to present their work in a technical session.

Submission Guidelines
Papers should be submitted in PDF format. The results described must be unpublished and should not be under review elsewhere.

Submitted papers must conform to the IEEE proceeding 8.5x11-inche, Two-Column Format (*), and should not exceed ten pages (including all text, figures, references and appendices).
Our Conference – CfP – Summary

• 4th Student Conference 2013
• July 19, 2013 in Magdeburg, Germany
• Overview Papers: Current state and future challenges in a topic of (1) Database Research, (2) Software Engineering Research, or (3) Computer Science in general
• Submission Deadline #1: May 19, 2013 (firm!)
• Notification #1: May 27, 2013
• 4-8 pages, IEEE proceeding 8.5x11-inche, Two-Column Format
• At least 3 reviews per submission
Review Process

• Assigning Papers to PC members
• Reviews
• PC Meeting
• Program
Program Committee (ICSE’09)

- Antonia Bertolino, ISTI-CNR, Italy
- Lionel Briand, Simula Research Laboratory & University of Oslo, Norway
- Betty H.C. Cheng, Michigan State University, USA
- S.C. Cheung, The Hong Kong University of Science and Technology
- Vittorio Cortellessa, Universita' dell'Aquila, Italy
- Krzysztof Czarnecki, University of Waterloo, Canada
- Robert DeLine, Microsoft Research, USA
- Prem Devanbu, University of California - Davis, USA
- Matthew B. Dwyer, University of Nebraska - Lincoln, USA
- Steve Easterbrook, University of Toronto, Canada
- Sebastian Elbaum, University of Nebraska - Lincoln, USA
- Wolfgang Emmerich, University City London, UK
- Kokichi Futatsugi, Japan Advanced Institute of Sci.&Tech., Japan
- Holger Giese, Hasso Plattner Institute, Germany
- Volker Gruhn, University of Leipzig, Germany
- John Grundy, University of Auckland, New Zealand
- Tibor Gyimothy, University of Szeged, Hungary
- Andre van der Hoek, University of California - Irvine, USA
- Valerie Issarny, INRIA, France
- Pankaj Jalote, IIT Delhi, India

- Jean-Marc Jezequel, INRIA & Univ. Rennes 1, France
- Jeffrey Kramer, Imperial College London, UK
- Axel van Lamsveerde, Université catholique de Louvain, Belgium
- Nenad Medvidovic, University of Southern California, USA
- Elisabetta Di Nitto, Politecnico di Milano, Italy
- Harrold Ossher, IBM T. J. Watson Research Center, USA
- Corina Pasareanu, NASA Ames, USA
- Massimiliano Di Penta, University of Sannio, Italy
- Mauro Pesze, University of Lugano, Switzerland and University of Milano Bicocca, Italy
- Gian Pietro Picco, University of Trento, Italy
- Klaus Pohl, University Duisburg-Essen, Germany
- Martin Robillard, McGill University, Canada
- William Robinson, Georgia State University, USA
- Barbara G. Ryder, Virginia Tech., USA
- Margaret-Anne Storey, University of Victoria, Canada
- Zhendong Su, University of Californi - Davis, USA
- Frank Tip, IBM T.J. Watson Research Center, USA
- Sebastian Uchitel, University of Buenos Aires, Argentina and Imperial College London, UK
- Claes Wohlin, Blekinge Institute of Technology, Sweden
- Alexander L. Wolf, Imperial College London, UK
- Jian Zhang, Chinese Academy of Sciences, China
Review

• Summary (~ 50-200 words)
• Evaluation, pros & cons (~ 100-1000 words)
• Rating
  – A: Good paper. I will champion it at the PC meeting.
  – B: OK paper, but I will not champion it.
  – C: Weak paper, though I will not fight strongly against it.
  – D: Serious problems. I will argue to reject this paper.
• Confidence
  – X: I am an expert in the subject area of this paper.
  – Y: I am knowledgeable in the area, though not an expert.
  – Z: I am not an expert. My evaluation is that of an informed outsider.
Evaluation Criteria (examples)

- Does the paper match the topic of the conference?
- Do title and abstract reflect the content of the paper?
- Is the paper well structured?
- Is the contribution of the paper clear? Is the motivation clear?
- Do sections contain the content promised in section titles?
- Is there a consistent recurring theme or does the author jump from idea to idea?
- Are all background information necessary for understanding the paper provided?
- Are there any unnecessary information/sections?
- Are arguments well supported by references? Are references complete and suited?
- Are examples/figures/tables used adequately to support understanding the paper?
- Is the reasoning of the paper correct?
- Is the paper well written (language, style)?
Typical comment patterns

• “the objectives are unclear”
• “too little beef”
• “the authors seem to ignore ...”
• “... so what?”
• “the paper fails to deliver what is promises”
• “unsubstantiated claims”
• “opinion paper...”
• “premature...”
• “the paper provides little evidence that the results do apply in real settings”, “scaleability is questionable”, etc
• “evaluation is weak”
Example Review

>>> Summary of the submission <<<
The paper presents a formal approach for X. The approach determines whether one X is Y with regard to Z. A formalization of X is used. The comparison is performed using a SAT solver. The approach does not enforce Y to contain Z.

>>> Evaluation <<<

Pros:
• The paper is well written.
• The problem is easy to understand, and the solution is elegant.
• The solution is shown to scale to large models.

Cons:
• The practical value of the approach is not demonstrated. One could get the impression that the paper is only a theoretical exercise.
• The paper neglects state-of-the-art comparison with other X algorithm for similar models.

Overall, the paper addresses an important problem. The idea of doing X with Y is novel. The related work focuses on Y and Y. Unfortunately, it does neglect X. For example, similar work has been proposed for Y. It remains unclear, whether the results produced by the approach correspond with the modeller's intuition (or the real changes) in most of the cases of...

Section X explains the algorithm, but X is not clear. Wouldn’t Y be Z?

In conclusion ...

Suggestions for improvement:
I suggest to explain X in more detail in this section as this is a central point for your paper (partly, you do this in Section 3, only X is illustrated. You should present examples of Y and Z as well.

Section 3:
Your approach to declare X as Y appears overly simplistic to me and may produce results that are counterintuitive. Consider, for instance, … see paper Z by Y.

Minor comments:
A different kind of evaluation would be more important here than the performance evaluation. You should provide ...

Short summary

Bullet Points help structure points in favor and against

Still write a full review arguing for or against the paper. Begin with pros.

Save minor issues to the end.
Multi-Round Review

• Grades
  – Accept - Needs Minor Revision - Needs Major Revision – Reject
• Author resubmits paper after improvement
  – Add a letter responding to the reviewers comments
• Same reviewers check improvements

Editor in Chief
============
REQUEST:
--------
It is critical that you address the relation to other work that both reviewers have mentioned, especially Reviewer 1. How do you distinguish your work from your own other work, the TOSEM submission, etc.? Your casual remark of the other being the "flip side of the coin" is both unenlightening and too informal.

RESPONSE:
--------
We have extended the related work section to explain in detail the difference between FFJ PL and our parallel line of work on CFJ. (In a nutshell, FFJ PL models feature-oriented product lines more directly, and it is more expressive with regard to alternative features.) At the end of Section 1, we provide an overview of the most significant related work, including the work on CFJ. Now...

REQUEST:
--------
Furthermore, always in the formalism return a list of features, whereas in the implementation it is stated as a predicate returning a true/false value. Please clarify.

RESPONSE:
--------
In Section 6, we show a simplified version of always that covers only case one of the case distinction. The complete definition is too verbose to be discussed at that point. The reader can have a look at the Haskell implementation for more details. Anyway, we added a note that this is only a simplified version, whose absence was presumably the reason for confusion.
Common Mistakes in StudConf Reviews

• Review in different language than the paper
• No summary of the paper
• Mixing points in favor and points against the paper
• Starting with minor points instead of major points
• Proposals for whole sentences (they authors cannot use them when the reviewer is anonymous)
• Evaluation only in bullet points (lack of full sentences, descriptions, explanations)
• Evaluation for each section separately
• Review too short (e.g., paragraph only)
• Feedback too detailed (you will not get co-authorship)
Mistakes in StudConf Reviews

• „Please consider to use MS Word's spellchecker before submitting any paper to anyone.“
• „Please summarize the results […]“
• „Can you extend the future work part of this section?“
• „Insgesamt hat das Papier [...] viel Potential, benötigt aber noch ein bis 2 Iterationen.“
• „Mir war nicht klar warum du das brauchst.“
• „Allerdings MUSS bei empirischen studien immer eine Section Threads to validity drin sein“
• „Proceedings of the 6th international conference on -> Proc. Int'l. Conf. on ... “
Mistakes in StudConf Reviews

• „locations can be omitted, such as New York, NY, USA“
• „When presenting a tool and its website, a footnote is more convenient than a real citation.“
• „there are some citations that don't seem to be published on a conference. Those citations should be avoided.“
• „the presented work shows pretty relevant results“
• „it looks better, if you write the references in one bracket. [2],[3] -> [2,3]“
• „Please get in mind, if this is beneficial“
• „Can you write the word ‘viewframe’ in italic style, because it is it very important“
Mistakes in StudConf Reviews

• „given in figure 2“, „and equation 6“
• „This section could be shortened.“
• „the author give a short overview“
• „is missing [...] a textual reference to the next section“
• „References are ordered as they are mentioned in the text, not alphabetically.“
• „The paper is incomplete [...] !!!“
• „Very often, authors put a comma after the “e.g.,” or “i.e.,”. As far as I know, that is not correct.“
• „I would combine sections: future work and conclusion.“
• „Useless, missing, and duplicate content“
Mistakes in StudConf Reviews

• „related work würde ich vorne besser finden“

• Example of a whole review:
  • „viele wortwiederholungen
gutes Englisch nur kleine Fehler
w.l.o.g. oder w.r.t. ??
bisschen mehr auf die formeln eingehen
gute Struktur und gute Recherche in Verbindung
mit einer guten Beschreibung“
# Conference Program

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<th>Sun 11</th>
<th>Mon 12</th>
<th>Tue 13</th>
<th>Sat 17</th>
<th>Sun 18</th>
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<tbody>
<tr>
<td>AM</td>
<td>PM</td>
<td>AM</td>
<td>PM</td>
<td>AM</td>
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<tr>
<td>APSO 2008</td>
<td>AST 2008</td>
<td>EA 2008</td>
<td>SHARK 2008</td>
<td>FSE PC Meeting</td>
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<td>SAM 2008</td>
<td>SDSOA 2008</td>
<td>FT1</td>
<td>SESE</td>
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<td>IWAAPE 2008</td>
<td>BWMSE 2008</td>
<td>FT2</td>
<td>NSES</td>
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<td>STC 2008</td>
<td>ROA 2008</td>
<td>FT3</td>
<td>DocSym</td>
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<tr>
<td>ICSP 2008</td>
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<td>FT4</td>
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<td></td>
<td></td>
<td>FT5</td>
<td>HT12</td>
<td>HT13</td>
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**The Westin Leipzic**

<table>
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<tr>
<th>Wed 14</th>
<th>Thu 15</th>
<th>Fri 16</th>
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<tbody>
<tr>
<td>AM</td>
<td>PM</td>
<td>AM</td>
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<tr>
<td>All Years of SE Keynote</td>
<td>All Years of SE Keynote</td>
<td>All Years of SE Keynote</td>
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<tr>
<td>MIP Award: Adams Keynote</td>
<td>Awards Session: Hanspalm Keynote</td>
<td>Clarke Keynote</td>
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<tr>
<td>Research</td>
<td>Research</td>
<td>Research</td>
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<tr>
<td>Education</td>
<td>Education</td>
<td>Health Care Experience</td>
</tr>
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</table>

**Informal and Formal Demos**

<table>
<thead>
<tr>
<th>Exhibition</th>
<th>Exhibition</th>
<th>Exhibition</th>
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</thead>
<tbody>
<tr>
<td>Reception and Birthday Party</td>
<td>Concert</td>
<td>Closing</td>
</tr>
</tbody>
</table>

**Congress Center Leipzig**

(example: ICSE’08)
How to Select a Conference/Workshop

• Difficult decision
• Ask experienced co-authors
• Quality Indicators:
  – Submissions and Acceptance Rate
  – Age and Tradition
  – Proceedings (no/online proceedings, ACM/IEEE/Springer, ...)
  – Who is organizer and PC member?
  – Conference Rankings (e.g. CORE Ranking)
  – Experience from attendees

<table>
<thead>
<tr>
<th>Top General SE Conferences</th>
<th>ICSE</th>
<th>FSE/ESEC</th>
<th>ASE</th>
<th>SPLASH/OOPSTA</th>
<th>ECOOP</th>
<th>ISSTA</th>
<th>FASE</th>
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<tbody>
<tr>
<td>2010</td>
<td>52/380(14%)</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>24/96(25%)</td>
</tr>
<tr>
<td>2009</td>
<td>50/405(12%)</td>
<td>32/7217(15%)</td>
<td>38/33222(17%)</td>
<td>25/144(17%)</td>
<td>25/117(21%)</td>
<td>25/93(27%)</td>
<td>30/124(24%)</td>
</tr>
<tr>
<td>2008</td>
<td>56/371(15%)</td>
<td>31/152(20%)</td>
<td>34/36280(12%)</td>
<td>33/117(28%)</td>
<td>27/138(20%)</td>
<td>26/9100(26%)</td>
<td>3(26%)</td>
</tr>
<tr>
<td>2007</td>
<td>49/334(15%)</td>
<td>43/20/251(17%)</td>
<td>37/40/312(12%)</td>
<td>33/156(21%)</td>
<td>25/160(16%)</td>
<td>22/107(21%)</td>
<td>30/141(21%)</td>
</tr>
<tr>
<td>2006</td>
<td>36/395(9%)</td>
<td>25/125(20%)</td>
<td>22/1212(18%)</td>
<td>26/157(17%)</td>
<td>21/160(13%)</td>
<td>22/84(26%)</td>
<td>27/166(17%)</td>
</tr>
</tbody>
</table>

29.05.2015

Student Conference
Ratings

• Top Level General Conferences (ICSE, FSE, OOPSLA, ECOOP)
• Other General Conferences (FASE, APSEC, ICSoft)
• Subfield Conferences (AOSD, ICSM, GPCE, MODELS, SPLC)
• Local Conferences (SE, BTW, BALTICDB)
• Workshops

• Top Level Journals
• Other Journals

• Paid Conferences
Aim High

• Write the best paper you can
  – Completed work
  – Sound evaluation
• Submit to good conferences
• Experienced co-authors very valuable

• Gain experience with small and mid-level conferences
• Use workshops to discuss early ideas/results and to foster collaborations/community

• Don’t submit premature/unfinished work just for feedback!
Deadlines

• Plan ahead. Know when important conference deadlines are
  – ICSE: August/September
  – FSE: February/March
  – ECOOP: December
  – GPCE: May
  – SPLC: February
• Start writing early (plan >2 month ahead)
• Don’t rush deadlines
  – write a good paper instead, complete the evaluation
  – alternative venues will come
• (Even the best scientists won’t write a top level conference paper in a week anyway)
Publications may take time

- Example: SPLC’09 paper
  - Ideas formed during Master’s thesis (Early 2007)
  - Version 2: Not submitted June 2007 (not finished in time)
- Paper changed significantly over time (dropped about 50%, reset focus, added new discussions, explained problem more)
- Today's viewpoint: paper was incomplete, rejections justified
- Much better/clearer paper by now
Do Research with Publication in Mind

• When starting with an idea -> already think of evaluation
• For whom is this relevant?
• Be general
  – Solve problem for company X -> Underlying problem is Y, can be solved generally with method Z
  – Company X as case study
• What conference / workshop could be interested?
• Prototypes instead of commercial quality tools