Mining and Analyzing Source Code Changes

Folien:
Englisch

Vortragssprache:
Englisch

Umfang (mit Diskussion):
50 min. Vortrag/Tool-Demo + Diskussion

Abstract: Current versioning systems track code changes on a pure textual level. While tools like “diff" allow for quickly storing and generating the textual differences, they suffer from one major problem: their line-based structure is coarse grained and does not consider syntax nor semantic information. It is therefore the task of the software developer to figure out what actually has changed in the source code and, moreover, what the impact of a code change is. This is often a difficult and time-consuming task, and it is not surprising that developers spend most of their time on understanding source code and its changes.

In this talk, we will introduce you to tree-differencing techniques and in particular to our IJM (Iterative Java Matcher) approach and tool. IJM is capable of extracting source code changes on the level of abstract syntax trees (ASTs). We argue that developers and researchers can leverage our detailed information to faster and better understand code changes and their potential impact, which is also confirmed by our initial results. We will finish the talk with a short tool demo of IJM and its DiffViz tool, presented by Veit Frick, Universität Klagenfurt.

Vortragender: **Martin Pinzger, Universität Klagenfurt, Klagenfurt am Wörthersee**

Martin Pinzger is a full professor of software engineering and the head of the Software Engineering Research Group at the Universität Klagenfurt, Austria. His research interests are in software engineering with focus on software evolution, mining software repositories, program analysis, software visualization, and automating software engineering tasks. He received a PhD (Dr. techn.) in 2005 and a MSc (Dipl. Ing.) in 2001 from the Vienna University of Technology. He was a Postdoc at the University of Zurich and a Visiting Researcher at Microsoft Research in Redmond. In 2008, he became an Assistant Professor at the Delft University of Technology from which he received tenure in 2012. He has authored and co-authored more than 90 scientific articles in renowned international journals and conference proceedings. In 2012, he won an NWO Vidi grant, one of the most prestigious Dutch individual research grants for his research proposal on recording and analysis of fine-grained code changes. In 2013, he received an ICSE 2013 ACM SIGSOFT distinguished paper award and the ICSM 2013 most influential paper award. In 2014, he won the ICSME 2014 Best Paper Award. Martin Pinzger is a senior member of IEEE and ACM.