Information Visualization

Introduction to the Special Issue of Selected Papers from Softvis, 2008
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What is This?

Introduction

Introduction to the special issue of selected papers from SOFTVIS'2008

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In this special issue of the *Information Visualization* journal, we are proud to present a selection of the recent state-of-the-art research that is going on in the field of Software Visualization, in conjunction with the 2008 edition of the ACM SOFTVIS symposium.

In the last years, Software Visualization has evolved rapidly from a research field with a relatively strong academic focus to a mature discipline that targets the entire spectrum of activities involved in the software engineering discipline, from requirements and design to architecting, testing, release, and all the various sub-fields of maintenance. Software Visualization researches methods and techniques to help engineers gain understanding in the structure, behavior and evolution of large software systems, by a combination of techniques ranging from static and dynamic analysis, data mining and pattern matching, information visualization, and interaction.

This special issue is dedicated to ACM SOFTVIS 2008, the 4th ACM Symposium on Software Visualization. SOFTVIS'2008 took place on 16–17 September 2008 in Herrsching am Ammersee, Germany, as part of the 'Visual Week' event, along with the Visual Languages and Human-Centric Computing (VL/HCC) symposium on visual languages and several related workshops. During this event, 16 full papers, eight short papers and nine posters were presented, demonstrating the potential of visualization in understanding a diversity of complex software systems.

Several notable observations can be made on the research presented at SOFTVIS'2008. A striking element is the very large number of live demos of software visualization tools and techniques that took place during all types of presentations. This reflects a growing awareness in the Software Visualization community to the need for validation and application of research results to real-life, large-scale problems and use cases, a trend that we can only welcome and support. Also noticeable was the application of several recent Information Visualization techniques and principles in the design of the presented works, such as various pixel-filling and texture-based methods, which reflects the decreasing gap between the Software and Information Visualization communities.

For this special issue, we have selected three of the best papers presented at SOFTVIS'2008 and invited their authors to submit extended versions. The papers reflect well the wide spectrum of interests in Software Visualization, the high concern for validation and user studies, the impact of the field in industrial practice and the highly applied nature of this discipline. De Pauw and Andrade, recipients of the SOFTVIS'2008 best paper award, present Streamsight, an application that helps to build, examine and monitor the dynamic behavior of complex, large-scale streaming applications. They demonstrate their results by means of feedback collected from more than 100 developers at IBM that have benefited from their visualization tool. Von Pilgrim and Duske present GEF3D, an Eclipse

framework that enables developers of this well-known open-source platform to easily and quickly implement three-dimensional editors for software artifacts. Their work demonstrates the challenges of constructing flexible and scalable software visualization applications, and the forces involved in a successful design. Xie, Kraemer, Stirewalt, Dillon and Fleming complete the special issue with a paper on educational aspects of Software Visualization. They propose an extension of UML sequence diagrams that helps novice programmers understand and work with concurrency. They present a set of user studies that support their proposed technique, and thereby illustrate the challenges of organizing comprehensive user evaluations.

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