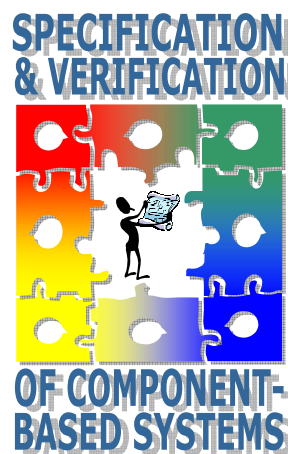


# SAVCBS 2004

## Specification and Verification of Component-Based Systems



*SIGSOFT 2004/FSE-12*  
*12<sup>th</sup> ACM SIGSOFT Symposium on the*  
*Foundations of Software Engineering*  
*Newport Beach, California, USA*  
*October 31-November 5, 2004*

Technical Report #04-09, Department of Computer Science, Iowa State University  
226 Atanasoff Hall, Ames, IA 50011-1041, USA



# **SAVCBS 2004 PROCEEDINGS**

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## **Specification and Verification of Component- Based Systems**

**<http://www.cs.iastate.edu/SAVCBS/>**

October 31-November 1, 2004  
Newport Beach, California, USA

Workshop at SIGSOFT 2004/FSE-12  
12<sup>th</sup> ACM SIGSOFT Symposium on the  
Foundations of Software Engineering



# SAVCBS 2004

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## WORKSHOP INTRODUCTION

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This workshop is concerned with how formal (i.e., mathematical) techniques can be or should be used to establish a suitable foundation for the specification and verification of component-based systems. Component-based systems are a growing concern for the software engineering community. Specification and reasoning techniques are urgently needed to permit composition of systems from components. Component-based specification and verification is also vital for scaling advanced verification techniques such as extended static analysis and model checking to the size of real systems. The workshop will consider formalization of both functional and non-functional behavior, such as performance or reliability.

This workshop brings together researchers and practitioners in the areas of component-based software and formal methods to address the open problems in modular specification and verification of systems composed from components. We are interested in bridging the gap between principles and practice. The intent of bringing participants together at the workshop is to help form a community-oriented understanding of the relevant research problems and help steer formal methods research in a direction that will address the problems of component-based systems. For example, researchers in formal methods have only recently begun to study principles of object-oriented software specification and verification, but do not yet have a good handle on how inheritance can be exploited in specification and verification. Other issues are also important in the practice of component-based systems, such as concurrency, mechanization and scalability, performance (time and space), reusability, and understandability. The aim is to brainstorm about these and related topics to understand both the problems involved and how formal techniques may be useful in solving them.

The goals of the workshop are to produce:

1. An outline of collaborative research topics,
2. A list of areas for further exploration,
3. An initial taxonomy of the different dimensions along which research in the area can be categorized. For instance, static/dynamic verification, modular/whole program analysis, partial/complete specification, soundness/completeness of the analysis, are all continuums along which particular techniques can be placed, and
4. A web site that will be maintained after the workshop to act as a central clearinghouse for research in this area.

