

6th ICSE Workshop on Component-Based Software Engineering: Automated Reasoning and Prediction

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ABSTRACT

Component-based technologies and processes have been deployed in many organizations and in many fields over the past several years. However, modeling, reasoning about, and predicting component and system properties remains challenging in theory and in practice. CBSE6 builds on previous workshops in the ICSE/CBSE series, and in 2003 is thematically centered on automated composition theories. Composition theories support reasoning about, and predicting, the runtime properties of assemblies of components. Automation is a practical necessity for applying composition theories in practice. Emphasis is placed in this workshop on composition theories that are well founded theoretically, are verifiable or falsifiable, automated by tools, and supported by practical evaluation.

Keywords

Composition, components, system analysis, quality attributes

1 INTRODUCTION

Component-based technologies are today in widespread use. Components offer model realism from chip architectures through embedded or telecommunication systems to enterprise-level or governmental workflows and services. The spreading of component-based technologies in conjunction with software architecture and product lines is increasingly connected with measurable gains in flexibility and productivity. However, modeling, reasoning about, and predicting component and system properties remains challenging in theory and in practice.

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reasoning about, and predicting, the runtime properties of assemblies of components. Automation is a practical necessity for applying composition theories in practice. Emphasis is placed in this workshop on composition theories that are well founded theoretically, automated by tools, and/or supported by evaluation.

Empirical and formal theories of composition are of interest. Questions relating to composition theory and practice include:

- Which properties are of interest in a given domain, and how should these properties be modeled?
- What general and property-specific models are useful for reasoning about, and predicting system behavior?
- How can component and assembly properties be measured?
- How can measurements and predictions be validated?
- How can composition theories be conveyed in a useful way to component users—the application builder?

Resolving these issues requires collaborative work of researchers across several domains in software engineering, computer science and engineering disciplines. The primary goal of CBSE6 is to achieve better understanding of the state of the art in automated compositional reasoning and prediction. While emphasizing state of the art, the workshop also aims at bridging theory and practice.

2 WORKSHOP ORGANIZATION

All participants were required to submit a 5-page position paper. Accepted papers are posted online at the workshop homepage, www.sei.cmu.edu/pacc/CBSE6. In keeping with the tradition of the ICSE/CBSE series, the format of the workshop is kept informal, and emphasizes discussion, debate, and dynamic planning. The opening session begins with short presentations of position statements (5-10 minutes). The organizers then propose a nominal discussion agenda and objectives, based on submissions. Workshop participants then confirm or modify the agenda and objectives, as they deem fit. There is no pre-set formula, and it is expected that the participants will decide on the most effective means to have productive sessions.

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