

# Informatik-Kolloquium

Fachgruppe Informatik

Lehrstuhl für Informatik 12

Mit Unterstützung des Aachen Institute for Advanced Study in Computational Engineering Science (AICES)



## EINLADUNG

- Zeit: Montag, 16. Juni 2008, 13.30 Uhr
- Ort: Seminarraum des Rechen- und Kommunikation-zentrums, Dienstgebäude Seffenter Weg 23
- Referent: Prof. Terence Parr  
Dept. of Computer Science  
University of San Francisco, U.S.A.
- Titel: The Reuse of Grammars with Embedded Semantic Actions

### Abstract:

Formal grammars lie at the heart of many important applications, including source code rewriting systems and program comprehension tools. Because many applications deal with the same language, the reuse of a common syntax specification with different semantics provides a number of advantages. While the advantages are obvious, the mechanism for grammar reuse is not so clear. To go beyond syntax checking, grammars must have some way to specify the translation or interpretation logic (the semantics). Unfortunately, the act of specifying the semantics can lock a grammar into one specific application since the grammar is often modified to suit (e.g., programmers often want to embed unrestricted semantic actions).

This talk proposes a mechanism based upon prototype grammars that automatically pushes changes from prototypes to derived grammars even in the presence of semantic actions. The prototype mechanism alone would be unsuitable for creating a new grammar from multiple pre-existing grammars. When combined with grammar composition, however, the prototype mechanism improves grammar reuse because imported pre-existing grammars can be altered to suit each new application. We illustrate these techniques with the ANTLR system in the context of the Java programming language.