Department of Computer Science
Research Focus
"Intelligent Formal Systems"

TECHNISCHE UNIVERSITÄT DRESDEN

Colloquium

Within the seminar of the Research Focus, the Ph.D. programme "Specification of discrete processes and systems of processes by operational models and logics" presents a talk by

Prof. Dr. Frank Drewes
Department of Computing Science
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about

"Avoiding Dead States in Query Learning of Regular Tree Languages"

Abstract: In the talk, an algorithm will be presented that learns a regular tree language L from a "minimally adequate teacher". This means that the learning algorithm has access to a device (the teacher) capable of answering

- membership queries ("Here is a tree t. Does it belong to L?") and
- equivalence queries ("I propose this fta. Does it recognize L? If not, give me a counterexample.")

This popular setting was introduced by Angluin, who proposed a similar algorithm for learning a regular string language, which was later extended to the tree case by Sakakibara. Both algorithms return the minimal total automaton recognizing L, i.e. an ordinary finite automaton in the string case and a finite tree automaton (fta) in the tree case.

The approach presented here differs from the earlier ones in that the fta returned is the minimal partial one recognizing L. This leads to a considerable gain in efficiency since dead states are avoided not only in the resulting automaton but throughout the whole learning phase.

Date:	11.10.2005
Place and time:	Hans-Grundig-Str., Room: GRU 151, 1.15 pm

All interested persons are invited to attend!

Prof. Dr.-Ing. habil. Heiko Vogler