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

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about

"Relating Tree Series Transducers and Weighted Tree Automata"

Abstract: In this talk we show how to implement bottom-up tree series transducers (tst) over the semiring $\mathcal{A}$ with the help of bottom-up weighted tree automata (wta) over an extension of $\mathcal{A}$. Therefore we firstly introduce bottom-up DM-monoid weighted tree automata (DM-wta), which essentially are wta using an operation symbol of a DM-monoid instead of a semiring element as transition weight. Secondly, we show that DM-wta are indeed a generalization of tst (using pure substitution). Thirdly, given a DM-wta we construct a semiring $\mathcal{A}$ along with a wta such that the wta computes a formal representation of the semantics of the DM-wta.

Finally, we demonstrate the applicability of our presentation result by deriving a pumping lemma for deterministic tst as well as deterministic DM-wta from a pumping lemma for deterministic wta.

Date:	16.11.2004
Place and time:	Department of Computer Science, Room: 151, 1.15 pm

All interested persons are invited to attend!

Prof. Dr.-Ing. habil. Heiko Vogler