The Bottom-Up Position Tree Automaton and its Compact Version

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Résumé

Automata are recognizers used to represent infinite regular languages, or to solve the membership test, i.e. to verify whether a given word belongs to a language or not. Regular expressions are compact representations for these recognizers. The conversion of a given regular tree expression into a tree automaton has been widely studied. However, classical interpretations are based upon a Top-Down interpretation of tree automata. In this talk, we propose a new construction based on Glushkov's one using a Bottom-Up interpretation. One of the main goal of this technique is to recognize languages that cannot be performed with classical Top-Down approaches. Furthermore, we exhibit a method to factorize transitions of tree automata and show that this technique is particularly interesting for the Glushkov constructions, by considering natural factorizations due to the structure of regular expression.

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