Words and Automata Research Group

Seminar Announcement

Regular Languages meet Prefix Sorting

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Friday 27th September 2019, 12 a.m.
Room 7, Via Archirafi 34, 90123 Palermo

Indexing strings via prefix (or suffix) sorting is, arguably, one of the most successful algorithmic techniques developed in the last decades. Can indexing be extended to languages? The main contribution of this paper is to initiate the study of the sub-class of regular languages accepted by an automaton whose states can be prefix-sorted. Starting from the recent notion of Wheeler graph [Gagie et al., TCS 2017]-which extends naturally the concept of prefix sorting to labeled graphs-we investigate the properties of Wheeler languages, that is, regular languages admitting an accepting Wheeler finite automaton. Interestingly, we characterize this family as the natural extension of regular languages endowed with the co-lexicographic ordering: when sorted, the strings belonging to a Wheeler language are partitioned into a finite number of co-lexicographic intervals, each formed by elements from a single Myhill-Nerode equivalence class.

For further information:

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All interested people, in particular students, are invited to participate