Controlled Pure Grammar Systems

Abstract

Jakub Chudík (xchudi01@stud.fit.vutbr.cz)
Jakub Šoustar (xsoust02@stud.fit.vutbr.cz)

October 31, 2016

In this presentation we introduce controlled pure grammar systems. The main difference between a pure and a regular grammar system is that the pure variant uses only terminal symbols. These generate languages in the leftmost way and they are regulated by control languages over their rule labels. We define controlled pure grammar systems and illustrate them by an example. Furthermore, we focus on three major results from previous investigation of their generative power.

First, pure grammar systems without any control language characterize only a proper subset of the family of context free languages.

Second, even systems with no more than two components can generate every recursively enumerable language when they are controlled by a regular language.

Lastly, pure grammar systems over unary alphabets controlled by languages that are themselves generated by regular-controlled context-free grammars generate only the family of regular languages.