

要旨

直感的記述を特徴とする数式組版特化言語の開発

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文書処理システム \LaTeX は整形された数式を出力可能であり, 数式を多用する文書を作成する際に有用である. しかし数式が複雑になるにつれて入力も複雑になり, 入力記述からどのような数式が出力されるか直感的に理解しづらくなるという問題がある.

本研究では直感的な記述で \LaTeX の数式を入力可能にする数式組版特化言語 (数式組版 DSL) を考案した. DSL とは特定の分野のみに特化した言語である.

実装には ANTLR を用いる. ANTLR は定義した文法ファイルを元に構文解析器, 字句解析器を生成するパーサジェネレータである. 直感的な記述を実現させるために文法を定義し, 入力された数式を ANTLR を用いて構文解析, 字句解析し, 解析結果を元に \LaTeX の数式記述に変換する. また, \LaTeX の数式と提案システムを用いた数式を比較し, 文字数の差分を調べる. その結果提案手法によって文字数の削減が見られた.

キーワード \LaTeX , 数式, ドメイン特化言語

Abstract

Development of a mathematical formula typesetting language that allows intuitive description

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The document processing system \LaTeX is capable of outputting a formula that is shaped, which is useful in preparing a document intensive formula.. But the formula is to also enter the complex as a complicated, there is a problem in that it is what kind of mathematical formula from the input description becomes difficult to intuitively understand what is output.

In this study, we devised a mathematical formula typesetting specialized language that enables output a formula of \LaTeX and intuitive description (mathematical formula typesetting DSL). DSL is a language that specialize only in specific areas.

Implementation To use the ANTLR. ANTLR based on the grammar file that defines, is a parser generator that generates a lexical analyzer and syntax analyzer. To define the grammar in order to realize the intuitive description, the inputted formula using the ANTLR syntax analysis, lexical analysis, to convert the formula description of \LaTeX on the basis of the analysis results.

In addition, compared to a formula that was using the proposed system with the formula of \LaTeX , examine the difference between the number of characters. Reduction of the number of characters have been seen by the results the proposed method.

key words \LaTeX , Mathematical formula, Domain Specific Language