

Scopus

[Search](#)
[Sources](#)
[Alerts](#)
[Lists](#)
[Help](#)
[SciVal](#)
[Register](#)
[Login](#)

Document details

[Back to results](#) | 1 of 1
[Export](#)
[Download](#)
[Print](#)
[E-mail](#)
[Save to PDF](#)
[Add to List](#)
[More...](#)
[Full Text](#)
[View at Publisher](#)

 Indonesian Journal of Electrical Engineering and Computer Science
 Volume 8, Issue 1, October 2017, Pages 36-42

Multiset controlled grammars: A normal form and closure properties (Article)

 Ashaari, S.^a
[ORCID](#)
 Turaev, S.^a
[ORCID](#)
 Tamrin, M.I.M.^a
[ORCID](#)
 Okhunov, A.^b
[ORCID](#)
 Zhukabayeva, T.^c
[ORCID](#)
^aKulliyah of Information and Communication Technology, International Islamic University Malaysia, Kuala Lumpur, Malaysia

^bKulliyah of Engineering, International Islamic University Malaysia, Kuala Lumpur, Malaysia

^cFaculty of Information Technology, L.N. Gumilyov Eurasian National University, Astana, Kazakhstan

Abstract

[View references \(16\)](#)

Multisets are very powerful and yet simple control mechanisms in regulated rewriting systems. In this paper, we review back the main results on the generative power of multiset controlled grammars introduced in recent research. It was proven that multiset controlled grammars are at least as powerful as additive valence grammars and at most as powerful as matrix grammars. In this paper, we mainly investigate the closure properties of multiset controlled grammars. We show that the family of languages generated by multiset controlled grammars is closed under operations union, concatenation, Kleene-star, homomorphism and mirror image. © 2017 Institute of Advanced Engineering and Science. All rights reserved.

Author keywords

[Closure property](#)
[Generative capacity](#)
[Multiset](#)
[Multiset controlled grammar](#)
[Regulated grammar](#)

Funding details

Funding number	Funding sponsor	Acronym
	International Islamic University Malaysia	IIUM
	Ministry of Higher Education, Malaysia	MOHE

Funding text

This research has been supported by the grants RIGS16-368-0532 and FRGS13-074-0315 of Ministry of Education, Malaysia through International Islamic University Malaysia.

ISSN: 25024752

Source Type: Journal

Original language: English

DOI: 10.11591/ijeecs.v8.i1.pp36-42

Document Type: Article

Publisher: Institute of Advanced Engineering and Science

References (16)

[View in search results format](#)
 All
 [Export](#)
[Print](#)
[E-mail](#)
[Save to PDF](#)
[Create bibliography](#)

- 1 Dassow, J., Paun, G. (1989) *Regulated Rewriting in Formal Language Theory*. Cited 477 times. Springer Berlin Heidelberg: New York

Metrics

0 Citations in Scopus

0 Field-Weighted Citation Impact


 PlumX Metrics
 Usage, Captures, Mentions, Social Media and Citations beyond Scopus.

Cited by 0 documents

Inform me when this document is cited in Scopus:

[Set citation alert](#)[Set citation feed](#)

Related documents

[Multiset controlled grammars](#)
 (2017) *Journal of Theoretical and Applied Information Technology*
[Parsing algorithms for regulated grammars](#)

 Turaev, S., Krassovitskiy, A., Othman, M. (2012) *International Journal of Mathematical Models and Methods in Applied Sciences*
[Erasing in petri net languages and matrix grammars](#)

 Zetsche, G. (2009) *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*
[View all related documents based on references](#)

Find more related documents in Scopus based on:

[Authors](#)
[Keywords](#)