Combinators for Single Source Context-Free Path Querying

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ABSTRACT

A clear and well-documented LaTeX document is presented as an article formatted for publication by ACM in a conference proceedings or journal publication. Based on the "acmart" document class, this article presents and explains many of the common variations, as well as many of the formatting elements an author may use in the preparation of the documentation of their work.

CCS CONCEPTS

• **Computer systems organization** → **Embedded systems**; *Redundancy*; Robotics; • **Networks** → Network reliability.

KEYWORDS

datasets, neural networks, gaze detection, text tagging

ACM Reference Format:
Mikhail Nikilukin, Ekaterina Verbitskaia, and Semyon Grigorev. 2018. Combinators for Single Source Context-Free Path Querying. In *Woodstock '18: ACM Symposium on Neural Gaze Detection, June 03–05, 2018, Woodstock, NY*. ACM, New York, NY, USA, 1 page. https://doi.org/10.1145/1122445.1122456

1 INTRODUCTION

Context-Free path querying (CFPQ) is an actively developed area in graph datatbase analysis.

CFPQ is widely used for static code analysis.

Languages for language-constrained queryes specification. CfSparql and proposal for Cypher.

Integration with general purpose programming language. Typing [1].

Combinators [2].

Single source scenario. Instead of traditional all pairs. Some of algorithms inheritantly calculate only all pairs reachability.

In this paper we make the following contributions.

- Introduce example and explain how to use combinators for CFPQ.
- Evaluate single source. We explore some basic properties of real-world dataset, such as lengths of paths and number of reachable vertices.

Woodstock '18, June 03–05, 2018, Woodstock, NY

ACM ISBN 978-1-4503-XXXX-X/18/06…$15.00
https://doi.org/10.1145/1122445.1122456

2 MOTIVATING EXAMPLE

In this section we introduce a simple problem of graph analysis which can be solved by using CFPQ.

First of all, we introduce a simple graph to be analyzed.

3 COMBINATORS FOR CONTEXT-FREE PATH QUERYING

In this section we demonstrate main features of combinators in the context of context-free path querying and integration with general-purpose programming languages. To do it we sove the problem which we state in the previous section.

3.1 Compositionality

same generation query

3.2 Type Safety

Static type chacking

3.3 User-Defined Actions

Additional computations

3.4 IDE Support

Screens!!!!

4 EVALUATION

Environment setup.

Dataset contains two real-world RDFs. Geosp [1]. enzime [2] Details are presented in table **??**.

Query. Same generation queries with user-defined actions for end verties and unique path counting.

Results. Destribution. Memory and time. Vertices and paths. Length.

5 CONCLUSION AND FUTURE WORK

We show that !!!

Future reserach

Improve combinators library.

Optimize performance. Deep integration with Neo4j: cache system, etc.

Create set of query templates.

ACKNOWLEDGMENTS

To Robert, for the bagels and explaining CMYK and color spaces.

[1] !!!
[2] !!!

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