

## Review of Doctoral Thesis

**Thesis Title:** Bulk Evaluation of User-Defined Functions in XQuery

**Thesis Author:** David Bednárek  
Department of Software Engineering  
Faculty of Mathematics and Physics  
Charles University in Prague  
Czech Republic

**Review Author:** Michal Krátký  
Department of Computer Science  
Faculty of Electrical Engineering and Computer Science  
VŠB Technical University of Ostrava  
Czech Republic

---

## Review

### Introduction

Evaluation of user-defined functions in XQuery is the current research issue. In this work, author introduces so-called bulk-evaluation and formal model for the query evaluation. Unfortunately, there are two important problems:

1. It is not clear which parts of this work were published
2. This work does not include any experimental results and comparing with other works

Only one author's article is unusually included in the list of references. Therefore, it is not clear if basic ideas of this work were published. I found a list of author's articles: one article was published by IEEE CS, four articles were published by Springer, and some papers were published in local proceedings. Four papers may be related to this work, however author must provide a relation among chapters and these articles.

Although this work introduces the bulk-evaluation and formal model author must provide some experimental results and he must compare this method with other methods, e.g.:

T. Grüst and J. Teubner: *Relational Algebra: Mother Tongue XQuery: Fluent*. In Proceedings of the First Twente Data Management Workshop on XML Databases, Enschede, The Netherlands, 2004.

This work includes some mistakes, however it is rather clear. These mistakes are as follows:

- page 5: a XML storage, a XML document
- page 11: a XML node
- page 12: The proper reference to the Dietz coding is as follows:  
Paul F. Dietz: Maintaining Order in a Linked List. In Proceedings of 14th annual ACM symposium on Theory of Computing. USA, 1982.
- page 22: There is no document or schema for queries in Chapter 3.

## Questions

1. Can you provide a list of your publications related to the basic ideas of this thesis?
2. Can you compare your work with other published methods? Can you provide some experimental results?

## Conclusion

Evaluation of user-defined functions in XQuery is the current research issue. I recommend this work for the defense. However, author must satisfy the above written questions.

In Ostrava, 7th August 2009

