

Attitude of Reviewer

of PhD Thesis of Anastasios G. Papapostolu
in the professional field 4.6 "Informatics and and computer science"
doctoral program "Computer science"

Thesis title "jADL, μσADL – Case Study of New Generation ADLs for Architecting Advanced Software Architectures"

written by Prof. Stefka Fidanova

By Order No. 1 ПД38-560/26.09.2019 of the Rector of Sofia University, I have been appointed a member of the scientific jury under the procedure for the obtaining the PhD degree in the professional field 4.6 "Informatics and and computer science" doctoral program "Computer science" by Anastasios G. Papapostolu with PhD thesis with title "jADL, μσADL – Case Study of New Generation ADLs for Architecting Advanced Software Architectures", supervised by Assoc. Prof. Dimitar Birov.

As a member of the scientific jury I have received:

1. PhD thesis in the professional field 4.6 "Informatics and and computer science";
2. Abstracts in Bulgarian and English;
3. Professional CV;
4. Copies of the author's publications related to the thesis.

The requirements of the Academic Staff Development Act of the Republic of Bulgaria are taken into account in the evaluation of the dissertation work, as well as rules for its implementation and rules on the Terms and Conditions for Acquisition of Academic Degrees and Occupation of Academic Positions in the FMI of SU. The basic rules that must be observed are:

1. According to Art. 6 (3) of the law "the dissertation work must contain scientific or scientifically applied results that make an original contribution to science. The dissertation must show that the applicant has a thorough theoretical knowledge of the relevant specialty and the capacity for independent research. "
2. According to Art. 27 (2) of the rules of low implementation, the dissertation work must be submitted in a form and volume corresponding to the specific requirements of the primary unit. The dissertation should contain: a title page; content; introduction; presentation; conclusion - summary of the results obtained; bibliography.

The dissertation consists of an Introduction, a Literature Review, three chapters with contributions of the dissertation and a Conclusion.

1. Relevance of the problem and the appropriateness of the goals and objectives set

The main purpose of this work is to create a new architecture description language, called jADL, to provide a means of formally describing dynamic and mobile software architectures with simple syntax.

The following more specific tasks are solved in order to achieve these goals:

- creating a language for describing next-generation architectures to define modern dynamic architectures called jADL;
- Language validation by describing well-known and widely used architectural models and more sophisticated contemporary architectures;
- Develop a tool to facilitate language use.

2. Knowledge of the status of the problem by the PhD student

There is no doubt that the dissertation has mastered the scientific issues well. The total number of

cited sources is 87, all of them in English and from foreign authors. The list of cited sources is up-to-date - more than half of the sources cited are from the last 10 years, but on the other hand, there are references to older, but important, topics.

3. Research methodology

The methodology for conducting the research chosen by the PhD student follows from the set goal and corresponds to the resulting tasks. It is fully adequate to the purpose of the work. An architectural language jADL is suggested. An analysis of the architectural element and other constructions of the language has been made. An extension of jADL called $\mu\sigma$ ADL has been made to facilitate the description of software systems following the architectural style of microservices. Validation of the proposed instruments has been made.

4. Characterization and evaluation of the contributions of the dissertation

The dissertation consists of six chapters (including introduction and conclusion), a list of cited literature, a list of publications related to the dissertation, a list of contributions claimed by the dissertation. Като приложения са дадени синтаксисът на jADL и $\mu\sigma$ ADL.

Chapter one is an introduction to the subject area of the study. There is a motivation for choosing the problem and the object of the research. A brief overview of the methods used in the dissertation is given. The goals and objectives of the thesis are outlined.

Chapter two provides a detailed literature review of languages for describing architectures.

Chapter 3 presents the language jADL for describing architectures and provides examples of how to implement it.

Chapter 4 gives an extension of jADL called $\mu\sigma$ ADL, intended to describe microservices.

Chapter 5 proposes a tool designed for jADL.

Chapter 6 presents the conclusions and guidelines for future work.

In my opinion the author's contributions of the thesis are:

- creation of a new architecture description language called jADL and its extension for $\mu\sigma$ ADL microstructures;
- design and development of a tool to facilitate the use of jADL;

5. The importance of development for science and practice

The dissertation work is sufficient in volume and depth of the research. An opportunity for practical realization is shown. In this sense, I find the work relevant both scientifically and practically.

6. Assessment of dissertation publications

In relation to the dissertation, the candidate submitted 7 publications. Publications 3 and 5 are with Impact rank. The PhD student participated in 6 conferences where he reported the results obtained in the dissertation. There are no information about citations.

7. Doctoral student's personal participation

The doctoral candidate is the first co-author in the dissertation publications. This gives me reason to believe that his involvement is essential.

8. Abstract

The abstract correctly reflects the content of the dissertation.

9. Critical notes

I have some critical notes on the technical layout of the thesis. The contributions are not well described. In my opinion, literary analysis cannot be a contribution. These remarks do not affect the results obtained and do not diminish the importance of the thesis.

10. Personal impressions

I do not know the Phd student and have no personal impressions of him.

11. Conclusion

The presented dissertation fully corresponds to the set of criteria and indicators for the acquisition of educational and scientific degree "Doctor", according to the Law for the Development of Academic Staff in the Republic of Bulgaria, Rules for its implementation and Rules for the conditions and procedure for acquiring academic degrees and occupying academic positions at Sofia University and FMI. I strongly recommend that the scientific jury award the PhD degree to Anastasios Georgios Papapostolu in the professional field 4.6 Computer Science and Computer Science, Doctoral Program in Computer Science.

07.10.2019
Sofia



(Prof. Stefka Fidanova)