

STATEMENT REPORT

under the procedure for acquisition of the educational and scientific degree “Doctor
by candidate Albena Emilova Antonova
of the PhD Thesis entitled: “Smart Services for Development of personalized and
adaptable educational video-games”,
In the Scientific field: **4. Natural Sciences, Mathematics and Informatics**
Professional field: **4.6. Informatics and Computer Sciences**
Doctoral program “Information Technologies”, Department „Information Technologies”,
Faculty of Mathematics and Informatics (FMI), Sofia University “St. Kl. Ohridski” (SU),

The statement report has been prepared by: prof. Milen Petrov, FMI, SU, Department of software technologies

(academic position, scientific degree, given names, surname - place of work)
as a member of the scientific jury for the defense of this PhD thesis according to Order № RD- RD-38-115 / 7.03.2023 of the Rector of the Sofia University.

1. General characteristics of the dissertation thesis and the presented materials

The dissertation consists of 141 pages (excluding appendices). With appendices, the volume becomes 170 pages. It is structured into a table of contents, a list of figures and a list of tables, an introduction, five chapters, a conclusion, a list of references cited, and five appendices. The number of references is 138.

The aim of this dissertation is to investigate, propose, develop, and validate intelligent services supporting the creation of personalized and adaptive maze-type educational video games enriched with mini-puzzle games. From the review of the scientific literature, I can conclude that the topic of this dissertation is in the contemporary interdisciplinary field of research, development, application, and evolution of information systems for video games in education.

2. Short CV and personal impressions of the candidate

I have had the opportunity to work with the candidate on various research projects and as a fellow-assistant at FMI and my personal impressions are very good, I know the candidate as a hardworking, helpful and smiling colleague.

3. Content analysis of the scientific and applied achievements of the candidate, contained in the presented PhD thesis and the publications to it, included in the procedure

The cited sources are 138 in number and are mainly from the last two decades, which shows the relevance of the topic and the discussions.

I accept the contributions formulated by the candidate, classifying and summarizing them as follows: a review and analysis of the scientific literature in the field of intelligent services, technological solutions for application in educational video games has been made (scientifically applied), models of intelligent services have been created in the context of maze-type educational video games (scientifically applied), and the proposed solutions for intelligent services for adaptive educational video games have been experimentally validated (applied contribution). The results of the dissertation have been extensively approved in the presented 7 scientific publications and reported at prestigious scientific conferences in Bulgaria and abroad.

4. Approbation of the results

There are 7 publications submitted for the competition, all of them in English. one of the publications [1] is with only one author, the rest are mainly with the two supervisors. Publication number [2] is in an open access scientific journal.

Of the submitted scientific publications [3], [4] and [7] are indexed in SCOPUS and have SJR, and one article [5] - is indexed in Web of Science - thus meeting the minimum national requirements for the PhD. They have been published in proceedings of scientific conferences.

All 7 publications the PhD candidate is either the sole or first co-author. It is evident from the submitted declarations that the contributions of the co-authors are equal.

There is no plagiarism proven under the statutory procedure in the submitted dissertation and research papers under this procedure.

The results did not replicate those involved in previous procedures.

5. Qualities of the abstract

The abstract is carefully prepared, and I have no comments on its layout. It is consistent with the results and content of the thesis.

My remark here is that the volume should be up to 32 pages to synthesize the most important of the thesis.

6. Critical notes and recommendations

The materials are very well structured and prepared.

I would also recommend continued publication in prestigious scientific journals with IF.

7. Conclusion

Having become acquainted with the PhD thesis presented in the procedure and the accompanying scientific papers and on the basis of the analysis of their importance and the scientific and applied contributions contained therein, **I confirm** that the presented PhD thesis and the scientific publications

to it, as well as the quality and originality of the results and achievements presented in them, meet the requirements of the Act on Development of the Academic Staff in the Republic of Bulgaria, the Rules for its Implementation and the corresponding Rules at the Sofia University “St. Kliment Ohridski” (FMI-SU) for acquisition by the candidate of educational and scientific degree “Doctor” in the Scientific field **4. Natural Sciences, Mathematics and Informatics** Professional field **4.6. Informatics and Computer Sciences** In particular, the candidate meets the minimal national requirements in the professional field and no plagiarism has been detected in the scientific papers submitted for the competition.

Based on the above, **I strongly recommend** the scientific jury to award Albena Emilova Antonova, the educational and scientific degree “Doctor” in the Scientific field **4. Natural Sciences, Mathematics and Informatics** Professional field **4.6. Informatics and Computer Sciences** (Information Technologies).

Date: 22.05.2023

Signature:

/prof. Milen Petrov/

/name, academic position, scientific degree/