OPINION

according to the procedure for the defense of a dissertation on the topic:

"Semantic technologies in eHealth"

to acquire educational and scientific degree "doctor" from

candidate: Kristin Ilieva Alexandrova

Field of higher education: 4. Natural sciences, mathematics and informatics /

Professional direction: 4.6. Informatics and computer science /

Doctoral program: "Information Systems - Knowledge-Based Systems", Department of Computer Informatics

Faculty of Mathematics and Informatics (FMI),

Sofia University "St. Kliment Ohridski" (SU),

The opinion was prepared by: Prof. Dr. Vasil Georgiev Tsounijev - FMI, SU "St. Kliment Ohridski", cat. KI,

in my capacity as a member of the scientific jury, according to Order No. RD 38-199/26.04.2024 of the Rector of Sofia University.

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

Doctoral student Kristin Alexandrova submitted a dissertation in English, abstracts in Bulgarian and English, as well as the other necessary reference documents and certificates as materials for her defense.

The dissertation has a volume of 177 pages and three appendices. The work is properly structured and formatted. The attracted analytical apparatus creates conviction for thorough and competent work. Many (more than a hundred) thematically related sources are cited in the exposition.

2. Data and personal impressions about the candidate

I know PhD student Kristin Alexandrova both from her participation with reports at international scientific forums, and from her active participation in the work on a research project at OP NOIR. I can confirm my excellent impressions of her thorough, competent, responsible and motivated work. I believe that she is a well-built young scientist with an excellent perspective.

Regarding the written results of the dissertation, I am familiar with them, as I prepared an opinion on the preliminary procedure for referral to defense and participated in the discussion with opinions and recommendations for the final design of the documents.

3. Content analysis of the candidate's scientific and applied scientific achievements, contained in the submitted dissertation and the publications to it, included in the procedure

The topic of the dissertation "Semantic Technologies in eHealth (Application of Machine Learning Technologies in Supporting Independent Living of the Elderly and Disadvantaged) is an extremely important and modern subject area. The contribution of the work can be characterized as applied research with the development of a model of the subject area and the study of its parameters. The domain model can be characterized as composed of two components – an architectural model of the infrastructure to explore the functional and non-functional characteristics of the application, and a model of the data and knowledge of the domain.

The chosen approach to explore the model is through prototyping and exploring the problem space of its functional and non-functional parameters. In particular, it can be noted that, in accordance with the chosen application area, efforts have been made to make the developed prototypes comply with GDPR requirements.

4. Approbation of the results

The two publications of the scientific results indexed in Scopus, presented by the autocrat, meet the minimum national requirements (according to Article 2b, paragraphs 2 and 3 of the RSARB) and, accordingly, the additional requirements of the SU "St. Kliment Ohridski" for the acquisition of an educational and scientific degree "doctor" in the scientific field and professional direction of the procedure. At the same time, they correspond and present correctly and fully the research described in the dissertation. From personal impressions, I can add that the candidate presents her scientific results at the relevant scientific forums confidently, professionally and convincingly.

The results presented by Kristin Alexandrova in her dissertation and scientific works leave no doubt as to their originality. I have witnessed the growth of her research interests and her developed capacity to achieve scientific results. Moreover, no plagiarism has been proven in accordance with the law in the submitted dissertation and scientific works under this procedure.

5. Qualities of the auto-reference

The Bulgarian and English versions of the abstract correctly reflect the essence of the dissertation, as well as the achieved results. The publications of Kristin Alexandrova presented for the dissertation (two indexed publications on scientific forums)

6. Critical notes and recommendations

My critical comments on the main thesis, which I made during the preliminary procedure, are reflected in the submitted final version of the material.

7. Conclusion

Having familiarized myself with the dissertation work presented in the procedure and the accompanying scientific works and based on the analysis of their significance and the scientific and applied scientific contributions contained in them, I confirm that the presented dissertation work and the scientific publications to it, as well as the quality and the originality of the results and achievements presented in them, meet the requirements of ZRASRB, the Regulations for its application and the relevant Regulations of SU "St. Kliment Ohridski" for the candidate's acquisition of the educational and scientific degree "doctor" in the scientific field 4. Natural sciences, mathematics and informatics and professional direction 4.6. Informatics and Computer Science. In particular, the candidate satisfies the minimum national requirements in the professional direction and no plagiarism has been found in the scientific works submitted for the competition.

Based on the above, I recommend the scientific jury to award Kristin Ilieva Aleksandrova an educational and scientific degree "doctor" in scientific field 4. Natural sciences, mathematics and informatics and professional direction 4.6. Informatics and Computer Science.

Faculty of Mathematics and Informatics (FMI),

Sofia University "St. Kliment Ohridski" (SU),

June 6, 2024   Prepared the opinion: ....

(Prof. Dr. Vasil Tsunizhev)