

STATEMENT

from

Assoc. Prof. Emil Georgiev Delinov, PhD,

Department of Informatics and Mathematics,

Trakia University, Stara Zagora

(PF 4.6. Informatics and computer sciences)

for

dissertation on a topic

" Development of intelligent tools for working with virtualized cultural and historical sites"

with author Iliya Iliev Nedelchev

for awarding the educational and scientific degree "**Doctor**"

Scientific area: 4. Natural sciences, mathematics and computer science,

Professional field: 4.6. Informatics and computer science,

Doctoral program: Informatics

The opinion was written and presented on the basis of order No. RD-22-2527 of 15.12.2025 of the Rector of Plovdiv University "Paisii Hilendarski", as well as a decision of the scientific jury, taken at its first meeting on 16.12.2025, on the basis of which I am appointed as a member of the scientific jury, which prepares an opinion on the procedure for the defense of a dissertation on the topic "Development of intelligent tools for working with virtualized cultural and historical objects " for the acquisition of the educational and scientific degree "**Doctor**". The author of the dissertation is Iliya Iliev Nedelchev - a full-time doctoral student at the Department of "Computer Systems", at the Faculty of Information and Communication Technology of the "Paisii Hilendarski" University, with scientific supervisor Prof. Stanimir Nedyalkov Stoyanov, PhD.

General description of the materials presented.

As a member of the scientific jury, I have received a set of materials on electronic media in accordance with Art. 36 (1) of the Regulations for the Development of the Academic Staff of the University of Plovdiv.

The submitted documents contain data from which it can be concluded that the doctoral student Iliya Iliev Nedelchev has in-depth knowledge and extensive experience in the field of computer science and software development. He has completed master's degrees in "Computer Systems and Technologies" in 2016 at the Technical University of Gabrovo and in "Psychology" in 2017 at the University of Veliko Tarnovo "St. Cyril and Methodius", Veliko Tarnovo. Throughout his career, he has worked and developed in the field of information technology. He also has over 3 years of management experience in leading a team for the development of software solutions.

Relevance of the topic, knowledge of the problem, appropriateness of the goals and objectives set. The topic of the dissertation is relevant and very useful considering that it is related to one of the very important areas of our national and community characteristics, responsibilities and obligations - the preservation, digitization, presentation and dissemination of cultural and historical heritage. The development of personal tourist guides and assistants is a topic that is widespread for various platforms, sites and regions. Such tools are increasingly integrated with all new information technologies, including artificial intelligence. They are gaining a wide range of applications and users and are focusing increased scientific and practical interest. The presented documents present data from which it can be concluded that the doctoral candidate has a thorough knowledge of the essence of the research problem - the referenced literature from 116 sources, the successful implementation of a prototype described in Chapter 3, its adaptation for a different application area described in Chapter 4, as well as the motivation and ideas for future development and adaptation.

Research methodology. The research methodology is described on pages 19 and 20 in the Introduction to the presented dissertation.

Characteristics and evaluation of the dissertation work. The dissertation work is 144 pages long, consists of an introduction, four chapters and a conclusion. The literature used is up-to-date and appropriately selected in accordance with the nature of the research. I have a note regarding the "online" sources from the Internet - no dates of last viewing/access are indicated.

In my opinion, the dissertation is structured logically, correctly and consistently. It presents the stages and progress of the research .

The introduction discusses the relevance of the topic and clearly formulates the purpose and objectives of the dissertation. The main goal is defined on page 19 of the dissertation and on page 3 of the Abstract in Bulgarian and the same page of its English version. The first chapter is an overview of the state of the problem. The second chapter presents the model and architecture of the personal tourist guide . The attention is focused on the functionalities and architecture of the virtual tourist guide containing intelligent agents. The third chapter is focused on the implementation of the prototype and the tools for building the multi-agent system. The attention is focused on the technical implementation and presentation of the approaches at its core. The fourth chapter presents the possibilities for adapting the developed architecture and prototype of a personal tour guide to a different application area - air monitoring in the Plovdiv region.

The abstract summarizes the content and results of the dissertation work and is prepared in accordance with the requirements.

In the presented materials I do not find the contributions of the dissertation work in an explicit form, although there is a declaration of originality for them. Based on the completed tasks, I assume that the contributions are of a scientific-applied and applied nature.

The doctoral student Iliya Iliev Nedelchev has presented six publications on the topic of the dissertation work published in 2020, 2021, 2024 and 2025. Two of them, published in editions indexed in the WoS and Scopus databases, were used to fulfill the minimum national requirements under Art. 2b, para. 2 and 3 of the ZRASRB and respectively according to Art. 24, para. 1 of the Regulations for the Implementation of the ZRASRB for the acquisition of the educational and scientific degree "**Doctor**". My opinion is that they summarize the results of the research presented in the dissertation. From the materials presented, I believe that the results achieved are the personal work of the doctoral student.

Critical remarks and recommendations. My main remarks are related to the explicit formulation of the contributions of the dissertation work.

I recommend that the doctoral student consider the possibilities for adapting and implementing the personal tour guide to work with more than one source of information, as well as approaches for "automatic switching" between them.

CONCLUSION

Based on the documents submitted during the procedure, I conclude that the doctoral student:

- satisfies the minimum national requirements in the professional field, as well as the provisions of the Law on the Promotion of Higher Education and Research in the Republic of Bulgaria and the regulations for its implementation, as well as the relevant Regulations for the Acquisition of Scientific Degrees at the University of Paisiy Hilendarski;
- possesses in-depth theoretical and practical knowledge in the specialty "Informatics" and proven abilities for scientific research.

This gives me reason for a positive assessment and I confidently propose to the esteemed scientific jury to award doctoral student **Iliya Iliev Nedelchev** the educational and scientific degree "**Doctor**" in the Scientific area 4. Natural sciences, Mathematics and Informatics, Professional field 4.6. Informatics and Computer Science.

22.01.2026

Member of the scientific jury:

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(Assoc. Prof. Emil Georgiev Delinov, PhD)