

OPINION

by **Corr. Member Lyubka Doukovska, DSc**
from the Institute of Information and Communication Technologies,
at the Bulgarian Academy of Sciences,
on the Thesis for awarding educational and scientific degree PhD,
under the Scientific Field: **4. Natural Sciences, Mathematics and Informatics**,
the Professional area: **4.6. Informatics and Computer Sciences**,
the Scientific PhD Specialty: **„Informatics“**

Author of the PhD Thesis: **Gergana Dimitrova Vassileva**

Title: **Models and methods for providing personalised services in e-learning**

In accordance with Order No. 100 from 04.05.2026 of the Director of the Institute of Information and Communication Technologies, I have been appointed as a member of the Scientific Jury regarding the PhD thesis of **Gergana Dimitrova Vassileva** for awarding the educational and scientific degree “Doctor of Philosophy” (PhD). The scientific advisor of the PhD thesis is **Professor Vladimir Vassilev Monov, PhD**.

As a member of the Scientific Jury I have received:

1. Order No. 100 from 04.05.2026 of the Director of the Institute of Information and Communication Technologies;
2. PhD thesis for the educational and scientific degree PhD;
3. Abstract of the PhD thesis for the educational and scientific degree PhD;
4. Copies of the publications on the topic of the PhD thesis;
5. Accompanying documents according to the procedure for the defense of the PhD thesis.

In order to form the final evaluation of the PhD thesis, the requirements of the *Development of Academic Staff Act in the Republic of Bulgaria* are implemented the

specific requirements in the Act's Institutional Regulation shall be taken into consideration, where the respective norms are:

1. Pursuant to Art. 6 (3) of the *Development of Academic Staff Act in the Republic of Bulgaria*, PhD thesis should contain scientific or scientific-applied results, which represent an original contribution in science. The PhD thesis must indicate that the candidate has in-depth theoretical knowledge of the relevant specialty and ability for independent research.

2. According to Art. 27 (2) of the specific requirements in the Act's Institutional Regulation, PhD thesis should be presented in a form and volume corresponding to the specific requirements of the primary unit. The PhD thesis should contain: a cover page; content; introduction; exhibition; conclusion - a summary of the results obtained with a declaration of originality; bibliography.

The PhD thesis is 174 pages long, with a bibliography including 130 literary sources. Its structure includes a glossary of terms, an introduction, four chapters, a conclusion and a summary of the results obtained, a thesis outline, a list of publications on the topic of the PhD thesis, directions for future research, a list of noted citations, a declaration of originality of the results, acknowledgements, a bibliography, a list of figures and a list of tables.

The aim of the PhD thesis is "to propose a model, methods and software tools for analyzing training needs, creating individual competence profiles and delivering personalized training programs".

To accomplish this aim, the following objectives have been pursued:

1. To develop a method for personalising the training programme according to the trainee's individual competence profile.

2. To develop a model for creating individual competence profiles and personalized training programs.

3. To develop a model for creating e-learning courses using generative artificial intelligence and integrating closed expert systems with content from OpenAI.

4. To develop a model for a comprehensive infrastructure for the creation and management of personalized competency profiles.

5. To develop an architecture and prototype of a platform for creating a personalized training program based on the trainee's competency profile.

To achieve the goal of the PhD thesis and in accordance with the formulated objectives, a research methodology has been developed, which includes theoretical, analytical, applied and experimental approaches, through which to ensure both scientific validity and practical applicability of the results obtained from the research.

I find that the aim and the problems formulated reflect the topicality and significance of the presented PhD thesis, as well as the possibility to apply the results.

The presented list of publications on the PhD thesis includes eight publications indexed in Web of Science and/or Scopus, of which two are in journals and six are in proceedings of international conferences. Two of the publications are independent, of which one in the open access journal - Problems of Engineering Cybernetics and Robotics and one in the proceedings of the 18th International Conference of Education, Research and Innovation, Seville, Spain. A list of 29 independent citations is presented. The data presented in this way give me reason to conclude that the research has been provided with the necessary publicity.

I accept that the contributions so formulated could be considered to have scientific and common application. This separation would allow detailing the results obtained in accordance with the specificity of their significance. Such defined contributions can be defined as enriching the existing scientific field with new knowledge.

The PhD abstract has a volume of 49 pages. It faithfully reflects the essence and content of the PhD thesis, including the purpose, subject, object and tasks of PhD thesis research and the ways of their realization.

In order to form the final evaluation of the PhD thesis, the requirements of the *Development of Academic Staff Act in the Republic of Bulgaria* and its Implementation Rules are to be taken into account, so I should note that all remarks made by me during the preliminary discussion of the PhD thesis are reflected in its final version.

In conclusion, I accept that the requirements of the Law for the *Development of Academic Staff Act in the Republic of Bulgaria* and the specific requirements in the Act's Institutional Regulations for its implementation, the Rules for the conditions and the order for acquiring academic degrees and for the occupation of academic positions in Bulgarian Academy of Sciences and the Rules for the specific conditions for acquisition of academic degrees and occupation of academic positions at the Institute of Information and Communication Technologies - BAS are fulfilled. After my introduction to the PhD thesis

and its publications, an analysis of their significance and the contributions they make, I give my positive assessment and I recommend to the Honorable Jury to award the educational and scientific degree PhD to **Gergana Dimitrova Vassileva** in the Scientific Field **4. Natural Sciences, Mathematics and Informatics**, the Professional area **4.6. Informatics and Computer Sciences**, the Scientific PhD Specialty **„Informatics“**.

20.05.2026

Sofia

Signature:

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