

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: **Viktor Matanski**

Title: **Computational framework for cross-modal art translation**

The scientific advisors: **Assoc. Prof. Anton Iliev and Assoc. Prof. Todorka Terzieva**

In accordance with Order No. RD-22-1414/17.07.2026 of the Rector of the Plovdiv University “Paisii Hilendarski”, I have been appointed as a member of the Scientific Jury regarding the PhD thesis of Viktor Matanski for awarding the educational and scientific degree “Doctor of Philosophy” (PhD). The scientific advisors of the PhD thesis are Assoc. Prof. Anton Iliev and Assoc. Prof. Todorka Terzieva.

As a member of the Scientific Jury I have received:

1. Order No. RD-22-1414/17.07.2026 of the Rector of the Plovdiv University “Paisii Hilendarski”;
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 included in 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 consists of 197 pages, with a bibliography including 250 literary sources. Its structure includes a table of contents, introduction, seven chapters, conclusion, author's reference for contributions, prospects for future development, approbation of the obtained results, publications on the PhD thesis, appendix, declaration of originality of the results and bibliography.

The aim of the PhD thesis is “to develop a computational framework for cross-modal translation of art”.

To achieve the set goal, the following five tasks have been formulated:

1. To develop a formal computational formulation of art translation, including an input-output contract with a typified taxonomy of failure modes, modal independent IR and an explicit hierarchy of constraints.

2. To design an ontological framework (CDAO) for structuring the knowledge required for analysis, interpretation and validation.

3. To design a multi-agent architecture with defined agent roles and an iterative mechanism for verification and correction.

4. To implement a prototype system for translation between painting, poetry and music with a detailed description of each stage and the general conceptual model of the framework.

5. To develop and validate a protocol for evaluating the results.

The PhD thesis presents a research hypothesis, proposes a methodology for conducting the study, and identifies the practical significance and limitations of the study.

The approach used in the PhD thesis combines conceptual analysis, formalization, ontological modeling, architectural design, prototype implementation, and experimental evaluation.

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 three publications, one of which is a journal with IF and two in proceedings of an international conference. The data thus presented 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 32 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, according to which I have the following remarks and recommendations:

1. Style errors are noted in the text of the PhD thesis.
2. The formulation of the PhD thesis results does not allow emphasizing the individual contribution of the PhD student.
3. The PhD student should focus her efforts on publishing her results in refereed scientific publications.

In conclusion, I accept that the requirements of 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 the Rules for the specific conditions for acquisition of academic degrees and occupation of academic positions at the Plovdiv University "Paisii Hilendarski" are accomplished. 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 “Doctor of Philosophy” (PhD) to **Viktor Matanski** in the Scientific Field **4. Natural Sciences, Mathematics and Informatics**, the Professional Area **4.6. Informatics and Computer Sciences**, the Scientific Specialty **Informatics**.

20.08.2026

Sofia

Signature:

/Corr. Member Lyubka Doukovska, DSc/