

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: **Miroslava Doncheva Dimitrova**

PhD Thesis Title: **Evaluation Framework of Retrieval-Augmented Generation**

In accordance with Order No. 75 from 27.03.2026 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 **Miroslava Doncheva Dimitrova** for awarding the educational and scientific degree “Doctor of Philosophy” (PhD). The scientific advisor of the PhD thesis is Academician Ivan Pochev.

As a member of the Scientific Jury I have received:

1. Order No. 75 from 27.03.2026 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 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 is written in English and consists of 215 pages, with a bibliography including 145 literary sources. Its structure includes an introduction, five chapters, a conclusion, appendices, a bibliography, a list of publications, a list of noted citations, and a declaration of originality of the results.

The aim of the PhD thesis is "to develop an evaluation framework for Retrieval-Augmented Generation (RAG) system, that supports evidence-based retrieval configuration decisions for RAG systems with open-source LLMs, with particular focus on similarity threshold configuration".

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

1. Define and implement the core components of the evaluation framework.
2. Establish model selection criteria.
3. Define metric selection and computation procedures.
4. Conduct controlled testing and analysis.

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 five publications, four of which are indexed in JCR-IF (Web of Science) and SJR (Scopus) and one is in the Journal on Problems of Engineering Cybernetics and Robotics, which is open access. A list of 64 independent citations is presented.

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 48 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 **Miroslava Doncheva Dimitrova** in the Scientific Field **4. Natural Sciences, Mathematics and Informatics**, the Professional area **4.6. Informatics and Computer Sciences**, the Scientific PhD Specialty **„Informatics“**.

20.04.2026

Sofia

Sign

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