STATEMENT

by Prof. Asya Georgieva Stoyanova-Doycheva, PhD,
University of Plovdiv "Paisii Hilendarski", Plovdiv,
Faculty of Mathematics and Informatics

on a competition for the occupation of an academic position "Associate Professor",
announced in State Gazette No. 69/31.07.2026
in field of higher education: 4. Natural sciences, Mathematics, and Informatics,
Professional field: 4.6 Informatics and Computer Science
for the needs of Varna Free University "Chernorizets Hrabar"

1. General Presentation of the Materials Received

By Order No. 605 of 30.09.2026 of the Rector of Varna Free University "Chernorizets Hrabar", I have been appointed as a member of the scientific jury of the competition to fill the academic position of "Associate Professor", announced in State Gazette No. 69 of 31 July 2026, in field of higher education 4. Natural Sciences, Mathematics, and Informatics, professional field 4.6. Informatics and Computer Science.

One candidate has submitted documents for participation in the competition – Chief Assistant Professor Dr. Ivan Stanimirov Stoyanov from the Department of Computer Science at Varna Free University "Chernorizets Hrabar".

The set of materials submitted on electronic media by Chief Assistant Professor Dr. Ivan Stanimirov Stoyanov complies with the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its Implementation, and Regulation No. 3 on the Academic Staff at Varna Free University "Chernorizets Hrabar".

2. Brief Biographical Data of the Candidate

Chief Assistant Professor Dr. Ivan Stanimirov Stoyanov graduated from the Sofia High School of Mathematics "Paisii Hilendarski" and obtained a Bachelor's degree in Finance from the University of National and World Economy, Sofia. In 2019, he completed a Master's degree in "Software Technologies with a specialization in Mobile Systems and Applications" at the Faculty of Mathematics and Informatics of Plovdiv University "Paisii Hilendarski", where he studied courses in the fields of artificial intelligence, intelligent agents, ontology engineering, intelligent software architectures, databases, and software technologies. In the period March 2020 – June 2023, he was a doctoral student at the same faculty in the doctoral programme "Informatics" and defended a dissertation on the topic "Research on the Creation of a Virtual Operator in an Infrastructure for Intelligent Agriculture". Since 2021 he has held the academic position of Chief Assistant Professor at the Institute of Information and Communication Technologies at the Bulgarian Academy of Sciences, and since 10.07.2026 he has been a Chief Assistant Professor at Varna Free University "Chernorizets Hrabar". The candidate is entered for the academic position of Chief Assistant Professor in the Register of Academic Positions and Dissertations of the National Centre for

Information and Documentation (NACID) and is a member of the John Atanasoff Union of Automation and Informatics.

3. General Characteristics of the Candidate's Activity

3.1. Teaching Activity

The teaching activity of Chief Assistant Professor Dr. Ivan Stoyanov at Varna Free University "Chernorizets Hrabar" is forthcoming, as he was appointed to the Department of Computer Science in July 2026. A significant part of his scientific output, however, has a direct educational orientation and demonstrates a sustained interest and practical experience in teaching: developed and approved curricula in artificial intelligence for specialized and innovative secondary schools, in-service training courses for teachers and teaching materials, as well as experimental training conducted with 115 students and an assessment of seven competencies in 53 students by means of criterion-referenced assessment and Bloom's taxonomy. This activity is a valuable prerequisite for his work as a lecturer.

3.2. Research and Applied Research Activity

For participation in the competition, Chief Assistant Professor Dr. Ivan Stoyanov has submitted 12 scientific works and one monograph, including:

- Monograph (chapter in a collective monograph) – 1 volume;
- Publications in journals – 5 papers;
- Publications in proceedings of international conferences, published in IEEE Xplore – 7 papers.

The habilitation thesis submitted is the book "Artificial Intelligence in 24 …/Book Three" (Prof. Marin Drinov Publishing House of the Bulgarian Academy of Sciences, Sofia, 2024, ISBN 978-619-245-470-8, 804 pages), in which the candidate is the author of a self-contained chapter of approximately 120 pages devoted to an introduction to generative artificial intelligence. The articles are published in the journals Mathematical Biosciences and Engineering (2021), TEM Journal (2024), BRAIN. Broad Research in Artificial Intelligence and Neuroscience (2025), and twice in Future Internet of the MDPI publishing house (2025 and 2026), while the conference papers are from the international conferences BdKCSE (2021 and 2025), ICAI (2022, 2023 – two papers, and 2024), and IEEE Intelligent Systems IS'26 (2026).

All 12 publications are in English and are indexed in the Web of Science and/or Scopus databases, four of them having an Impact Factor (IF) – two ranked in quartile Q1, one in quartile Q2, and one in quartile Q4.

In the report on the fulfilment of the minimum national requirements, the candidate has recorded 50 points in group A, 100 points in group C, 417 points in group D, and 152 points in group E, or a total of 719 points against a minimum requirement of 400 points. The candidate meets and considerably exceeds the minimum national requirements set by the Regulations for the Development of the Academic Staff in the Republic of Bulgaria in each of the groups of indicators, as well as the additional requirements under Art. 18, para. 2 of Regulation No. 3 on the Academic Staff at Varna Free University "Chernorizets Hrabar".

Chief Assistant Professor Dr. Ivan Stoyanov has made scientific, scientific-applied, and applied contributions in the fields of event modeling, knowledge-based systems, intelligent agents, and agent-oriented platforms. He has developed a formal event model with a hierarchical classification of basic, system, and domain-oriented events, with operators and predicates for the construction of complex events and with mechanisms for accumulation, memory, priorities, and context validity, and has implemented it through the multi-agent interpreter ECOS (Event-driven Context-Oriented Server). The model has been applied consistently in the ViSMod environment for modeling scenarios in intelligent agriculture, in a formal model of an irrigation system with verification by means of the Calculus of Context-aware Ambients, and in the air quality domain. He develops architectures integrating semantic networks, frames, rules, and OWL ontologies, as well as expert systems for the diagnosis of livestock poisoning. He has created a general model of a personalized intelligent assistant as a rational BDI agent on the JaCaMo and Jadex platforms and has applied it in intelligent agriculture, air quality monitoring, and the digitization of cultural and historical heritage. A significant contemporary result is the extension of the architecture through the integration of classical BDI agents with ReAct agents based on large language models, which combines symbolic and generative artificial intelligence, as well as the cross-platform integration at the agent level by means of the FIPA-ACL and Contract Net protocols. A separate line of research is the methodology for introducing artificial intelligence in secondary schools through logic programming with Prolog and the STEM approach. The individual lines of research are not isolated but build a consistent research line – from the formal models, through the intelligent assistants and the agent-oriented platforms, to the applications and the teaching – which corresponds entirely to the subject of the competition.

Some of the results achieved by Chief Assistant Professor Dr. Ivan Stoyanov have been utilized in four research projects – the National Research Programmes of the Ministry of Education and Science “Intelligent Crop Production” (No. D01-65/19.03.2021) and “Intelligent Animal Husbandry” (No. D01-62/18.03.2021), project KP-06-M62/2 “Knowledge Modeling in the Field of Bulgarian Folklore” funded by the Bulgarian National Science Fund, and project IS-PGR-SADOVO “Intelligent System for the Management of the Bulgarian Plant Gene Pool Preserved in the Gene Bank of the Institute of Plant Genetic Resources, Sadovo” (contract No. KP-06-N86/9 of 09.12.2024). The candidate has presented the results of his research at the international conferences BdKCSE, ICAI, and IEEE Intelligent Systems.

Dr. Ivan Stoyanov has submitted a report with 19 citations of 8 of his publications, all of them in publications referenced and indexed in Scopus and/or Web of Science. Among the citing publications are the journals Sustainability (Q1), Smart Agricultural Technology, and International Journal of STEM Education. The number and the geography of the citations show that the candidate’s work is noticed by the international scientific community.

4. Assessment of the Candidate’s Personal Contribution

All 12 publications with which Chief Assistant Professor Dr. Ivan Stoyanov participates in the competition are co-authored. Among the scientific works submitted, with no proven plagiarism according to legal regulations, the candidate is the first co-author in 2 of them, the second co-author in 2 of them, and the third or later co-author in 8 of them. The co-authors are predominantly from

the Institute of Information and Communication Technologies at the Bulgarian Academy of Sciences and from the Faculty of Mathematics and Informatics of Plovdiv University "Paisii Hilendarski", that is, the candidate has worked within an established research team, and the main results have been obtained within the framework of the research programmes and projects referred to above.

The report on the original scientific contributions is well structured. The contributions are grouped into lines of research, each statement is linked to specific publications, and it is indicated how the results of one line of research are built upon in the following ones. This makes it possible to trace that the candidate's personal contribution is concentrated in the development of the event model and its implementations – it is precisely the two publications in which he is the first author that carry this contribution, and the most recent of them presents the ECOS interpreter.

I have not established any plagiarism in the scientific works submitted for the competition.

I have known Chief Assistant Professor Dr. Ivan Stoyanov since his studies in the doctoral programme "Informatics" at the Faculty of Mathematics and Informatics of Plovdiv University and from our joint work on research projects and publications. My impression of him is that he is a correct and responsible colleague who works systematically and in depth.

5. Critical Remarks and Recommendations

My recommendations to the candidate are to direct his efforts towards single-authored publications and to continue his publication activity in journals with an Impact Factor in the first and second quartiles.

CONCLUSION

The documents and materials submitted by Chief Assistant Professor Dr. Ivan Stanimirov Stoyanov fully comply with the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its Implementation, and Regulation No. 3 on the Academic Staff at Varna Free University "Chernorizets Hrabar". The candidate in the competition has provided a sufficient number of scientific works published after the materials used for obtaining the Doctoral degree. His research includes original scientific, scientific-applied, and applied contributions, which have gained international recognition, as a representative part of them has been published in journals and scientific proceedings by international academic publishers. I particularly note the event model he has developed and its multi-agent implementation ECOS, as well as the integration of classical BDI agents with agents based on large language models – a result that places the candidate's work at a contemporary scientific level. The achievements in his research activity meet and considerably exceed the minimum national requirements set by the Regulations for the Development of the Academic Staff in the Republic of Bulgaria and the additional requirements of Varna Free University "Chernorizets Hrabar".

After reviewing the materials and scientific works submitted for the competition, analyzing their significance and the scientific, scientific-applied, and applied contributions contained in them, I find it justified to give my positive evaluation and recommend that the Scientific Jury prepares a report-proposal to the competent body of Varna Free University "Chernorizets Hrabar" for the

appointment of Chief Assistant Professor Dr. Ivan Stanimirov Stoyanov to the academic position of Associate Professor in the field of higher education 4. “Natural Sciences, Mathematics, and Informatics”, professional field 4.6. “Informatics and Computer Science”.

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Plovdiv Prof. Asya Stoyanova-Doycheva, PhD