

OPINION

from Professor D.Sc. Daniela Borissova – Institute of Information and Communication Technologies (IICT) at the Bulgarian Academy of Sciences

on competition for academic position “**Professor**” in professional field 4.6 “Informatics and Computer Sciences”, specialty 01.01.12 “Informatics (Artificial Intelligence)”, announced for the needs of IICT-BAS, Department “Linguistic Modelling and Knowledge Processing”, published in press No 41/21.05.2019 with sole candidate **Assoc. Prof. Dr. Gennady Agre**

1. General description of the presented materials

According to Order No 176/19.07.2019 of the Director of IICT-BAS I was appointed a member of the Scientific Jury, and at the first meeting held on 29.07.2019 I received the materials in connection with the competition on electronic media

The evaluation of the candidates for the occupation of the academic position “**Professor**” shall be carried out in accordance with Art. 61 para. 1 and 2 from Rules for Implementation of the Law on the Development of Academic Staff in the Republic of Bulgaria (RILDASRB), and in accordance to the information from the references under Art. 60 para. 3. In connection with the implementation under Art. 60, para. 1 and 2 it was ascertain the presence of:

- A copy of the diploma No 22420 dated September 4, 1992 from the Higher Attestation Commission for a candidate of sciences in implementation of art. 60, para. 1;
- certificate of work experience in the specialty, of which 33 years and 8 months as an associate professor – according to Art. 60, para. 2;
- List of scientific publications of Assoc. Prof. Dr. Gennady Agre, submitted for competition for the academic position of "Professor" in professional field 4.6 Informatics and Computer Science, specialty "Informatics (Artificial Intelligence)", announced in press no. 41/21.05.2019, which do not repeat the ones submitted for the acquisition of the educational and scientific degree "Doctor" and for the occupation of the academic position "Assistant Professor" – according to Art. 60, para. 3;

- A reference for the fulfillment of the minimum requirements of the ICT, which shows that the relevant minimum national requirements and the requirements of Art. 1a, para. 2 are satisfied, in accordance with the requirement of Art. 60 para. 5;
- A declaration for lack of plagiarism in the scientific works, proven by the law, in accordance to Art. 60 para. 6.

To fulfill the art. 60 para. 6(3) the applicant has submitted a reference for the fulfillment of the minimum national requirements, the requirements under art. 1a, para. 2, as well as a reference for the original scientific contributions, to which are enclosed relevant evidence.

2. General characteristics of the publications and a reference to the original scientific contributions

In order to participate in the competition for the academic position of "Professor", Assoc. Prof. Dr. Gennady Agre has presented a list of 29 publications, apart from those participating in the procedures for "Doctor" and "Associate Professor". One of these publications is in journal with IF (Q2), 20 publications are in journals with SJR or series, 6 are in conference proceedings indexed in Scopus/WoS and 2 of them are book chapters published by international academic publishers.

For the indicators from Group B, 6 publications indexed in Scopus are presented with a total score of 104. To fulfill the indicators from Group D, one book chapter and 22 publications indexed in Scopus/WoS are presented with a total score of 458. For the indicators from Group D, 5 publications are presented, with overall 315 citations in Scopus and part of them are used to meet the national minimum requirements for the academic position of Associate Professor. The following materials have been presented to fulfill the indicators from Group E: 1 published university textbook; leader of 3 Bulgarian teams in international scientific projects; participation in 5 international scientific projects; leader of 3 national science projects and participations in 2 national science projects that is equal to 343 score of from these activities.

The main scientific and applied contributions in the submitted competition publications can be structured as contributions in the fields of: 1) Semantic Internet Services, 2) Technologically Supported Training, 3) Machine self-Education and Data Mining.

- I. The main contributions of Assoc. Prof. Gennady Agre in the field of semantic internet services are related to the implementation of INFRAWEBs project under the 6th Framework Program (2004-2007). The results of the proposed conceptual architecture of an integrated INFRAWEBs environment for semantic engineering of Internet services are reflected in publications # 2, 4 and 5. The developed and implemented original dynamic compositing approach for WSMO-based semantic Internet services is described in Publications # 4, 5, and 24. The description of an integrated environment for constructing of the described WSMO-based on

Semantic Internet Services INFRAWEBs Designer with ontologies are presented in publications # 1 and 3.

- II. In the field of technology-based training, the scientific contributions are focused on: 1) methods for using semantic technologies to develop technology-based training applications (publications # 6-3); and 2) improving of methods for technology-based training by introducing game elements – gamification (publications # 14-18).
- III. In the field of machine learning and data mining, the key contributions are related with development of new ones and the improvement of existing algorithms for machine learning by instance-based learning (publications # 23 and 27), and applications in various subject areas (publications # 19-23, 25, 26, 28 and 29).

3. Reflection of scientific publications

In the competition documents, 5 publications are presented with total 315 citations in SCOPUS. I accept the citations of publications # 1, 2, 4 and 5, as most of the citations for the third publication are used for the academic position of Assistant Professor. The reduced number of citations to 305 corresponds to 1830 score, which significantly exceeds the minimum threshold of 140 score for the indicator from Group D.

4. Assessment of the personal contribution

Assoc. Prof. Dr. Gennady Agre has presented a list of 29 publications for the competition, where for 3 of them he is a single author, in 7 he is the first author, and the remaining 19 are assumed equal participation with the other authors. All 29 publications for the competition are in English.

From the presented CV it could be seen that Assoc. Prof. Dr. Gennady Agre has been participated as a leader and member in different scientific international and national projects, and also he participated in the organization of international conferences and in various program committees at international conferences. He is also involved in teaching activities at the Sofia University, Faculty of Mathematics and Informatics, where he has been lector on "Machine Learning" and "Data Mining" courses during the last 16 years. He has been supervisor of 17 students from master program on Artificial Intelligence.

Assoc. Prof. Dr. Gennady Agre has been participated as a scientific editor of a number of scientific conference proceedings and he is the editor-in-chief of the series "Abstracts of Dissertations of IICT-BAS", e-ISSN: 1314-6351, editor-in-chief of the series "Lectures Notes in Computer Science and Technologies of IICT-BAS", e-ISSN 2367-8666 and dep. editor-in-chief of the journal "Cybernetics and Information Technologies", ISSN 1311-9702.

5. Critical remarks and recommendations

Taking into account the active organizational and teaching activities of Assoc. Prof. Dr. Gennady Agre, I would recommend to focus his efforts on working with PhD students to impart their knowledge and skills to future young researchers.

6. Conclusion

Taking into account the presented documents and the facts stated above it is evident that the applicant meets the necessary requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria and its Rules for Implementation, as well as the Regulations of BAS and the Regulations on the specific conditions for acquiring academic degrees and occupying academic positions at IICT-BAS. That's why I suggest Assoc. Prof. Dr. Gennady Agre to be elected to the academic position "Professor" in the professional field 4.6 "Informatics and Computer Science", specialty: 01.01.12 "Informatics".

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