

REVIEW

**by Prof. Radoslav Dimov Pavlov
Institute of Mathematics and Informatics – BAS**

on a competition for the occupation of an academic position "Professor" in the scientific specialty of Informatics and Computer Science (Software Technologies - Data mining), for the needs of Sofia University "St. Kliment Ohridski" (Sofia University, SU), Faculty of Mathematics and Informatics (FMI), declared in the State Gazette no. 52 of 2 July 2019 and on the websites of FMI and SU

Applicant: The only candidate for the academic position Assoc. Prof. Dr. Olga Ilieva Georgieva, SU, FMI, Department "Software Engineering".

This review is in accordance with the order of the Rector No. 38-525/28.08.2019 for the members of the jury for the present competition, and the decision of the scientific jury. It is made according to the Act for the Development of the Academic Staff in the Republic of Bulgaria, the Rules for its implementation and the rules on the Terms and Conditions for Acquisition of Academic Degrees and Occupation of Academic Positions at Sofia University "St. Kliment Ohridski".

As a member of the scientific jury, I have received all the required administrative and scientific documents from the candidate:

- an application for admission to the competition;
- a curriculum vitae;
- a diploma for educational and scientific degree "Doctor";
- a reference for completing the national minimum requirements;
- documents, certifying the fulfillment of the requirements of Art. 80, Art. 81 (para. 2 and para. 3) and Art. 84 (para. 2) of the Rules, regarding an undergraduate teaching load, publications of study materials, work with students, work on curricula, participation in research projects;
- a reference for original scientific contributions with the relevant evidence attached;
- a certificate for an internship in the field;
- an extensive list of scientific publications;
- a list of scientific publication relevant to the competition;
- a reference to the original scientific contributions in the publications; a list of quotations;
- a declaration of absence of circumstances related to infringements of intellectual property rights;
- the complete publications relevant for participation in the competition;
- other supplementary materials.

The submitted documents from the applicant comply with the requirements of ЗРАСРБ, ППЗРАСРБ and Terms and Conditions for Acquisition of Academic Degrees and Occupation of Academic Positions “Professor” at Sofia University “St. Kliment Ohridski”.

1. General principles and biographical information

Olga Ilieva Georgieva graduated as a Master degree student in Process Control from the Technical University - Sofia. In 1995 she defended her thesis on "Modeling and Control of Batch Biotechnological Processes under Uncertainty" and is awarded the educational and scientific academy degree Doctor of Philosophy (PhD). In the period 1994 - 2008 she was successively a Research associate (Assistant professor) of I-st and II-nd degree, as well as a Senior researcher of II degree (Assoc. Professor) at the Institute of Control and Systems Research, BAS. Since 2008 she is Associate Professor in Informatics (Software Technologies) in the department of Software Engineering, Sofia University “St. Kliment Ohridski ”. Since 2014 she has been the head of the department.

2. General characteristics of the scientific, applied and academic activity of the candidate

As part of his application for the competition, Assoc. Prof. Dr. Olga Ilieva Georgieva has presented the following publications: 2 are book chapters, 6 are articles in peer-reviewed scientific journals, 4 of which are impacted, and 13 are published in conference proceedings. 15 have been published abroad and 6 in international forums in Bulgaria. 20 were referenced in Scopus, 11 are referenced in Web of Science.

All the scientific publications presented are in the professional field 4.6 Informatics and Computer Science (Software Technologies - Data mining). Thus, the candidate meets all the minimum requirements for the academic position “Professor”, as set by ЗРАСРБ, ППЗРАСРБ and Terms and Conditions for Acquisition of Academic Degrees and Occupation of Academic Positions “Professor” at Sofia University “St. Kliment Ohridski”.

Olga Georgieva's teaching activity is at the Faculty of Mathematics and Informatics Sofia University “Kl. Ohridski ”and has the necessary and documented general internship in the specialty and a guaranteed amount of teaching for the academic position of“ Professor ”at Sofia University“ Kl. Ohridski ". A detailed report on the indicators under Art. 122, para. 2 of the Rules of the Sofia University “Kl. Ohridski ", which shows that the applicant is a lecturer in 4 courses, two of which are required -"Software Requirements Analysis" (for bachelors) and "Software Systems Models" (for masters), and two elective courses in fuzzy sets and professional ethics.

Olga Georgieva is the author of a number of educational materials in electronic format. He is the head of 10 graduates, one current and one PhD candidate. He has been involved in a number of educational and scientific projects.

3. Evaluation of the scientific and practical results and contributions in the submitted publications

Olga Georgieva has presented a detailed authorship on the scientific and applied results obtained in the publications submitted for participation in the competition. It accurately reflects the scientific achievements and practical results of the publications. The results of the publications are structured in the following nine directions:

- New approaches to identify the data structure off-line and in real time;
- New approaches of software service selection accounting different metrics;
- A new method for non-iterative data clustering is proposed, which detects significant clusters of noise;
- Approaches for estimation of people's states by analyzing data of brain activity;
- New regression and neural network models have been developed to describe complex processes and phenomena;
- A fuzzy linguistic model for evaluating software reliability has been developed;
- A neural network model of the power consumption of arc furnace;
- A regression model for recognizing loss of attention;
- A linear regression model for assessment of play style in educational games.

More of the presented results are applied in various fields of application - medicine, software development and more.

It can be summarized that the candidate's scientific and applied contributions in the identified areas are relevant and significant, leading to new knowledge and expanding existing knowledge in the field.

The candidate has 75 citations in Scopus, which are mainly from collections of scientific conferences. Most of the citing works are from foreign authors. Outside of the competition, the author shows a reference for another 150 citations. In summary, the big amount of citation proves the popularity of the results of Prof. Olga Georgieva among the international scientific community.

The results shown are up-to-date and in fields, related to the contemporary developments in 4.6 Informatics and Computer Science (Software Technologies - Data mining), and completely meet the requirements of the competition for the academic position "Professor" at Sofia University "St. Kliment Ohridski".

I have no personal impressions from Olga Georgieva, however her high publication activity in significant editions should be noted.

4. Comments and recommendations

I have no remarks and recommendations.

5. Conclusions

Based on the comments above, concerning the submitted materials, scientific publications, their significance, and the scientific and practical contributions they offer, and the candidate's academic activity and work with students, it is my opinion that Associate Professor Olga Ilieva Georgieva, PhD satisfies all the requirements of ЗРАСРБ, ППЗРАСРБ and Terms and Conditions for Acquisition of Academic Degrees and Occupation of Academic Positions "Professor" at Sofia University "St. Kliment Ohridski" in the professional field 4.6 Informatics and Computer Science. I **give a positive assessment** of the candidate. I **recommend** that the scientific jury propose to the competent body for the selection of the Faculty of Mathematics and Informatics at Sofia University "St. Kliment Ohridski" to choose Assoc. Prof. Olga Ilieva Georgieva to take the academic position of "Professor" in the professional field of 4.6 Informatics and Computer Science (Software Technologies - Data mining).

2.11.2019
Sofia

Reviewer:
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