

POSITION
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

The position was prepared by Prof. Dr. Sylvia Hristova Ilieva, Sofia University "St. Kliment Ohridski", Faculty of Mathematics and Informatics, Department "Software Engineering", as a member of the competition jury in 4.6 Informatics and Computer Science under the competition according to Order No. ПД 38-525 / 28.08.2019. of the Rector of Sofia University.

Only one candidate has applied for participation in the announced competition: Assoc. Prof. Dr. Olga Ilieva Georgieva, SU, FMI, Department "Software Engineering".

I. General description of the presented materials

1. Details of the application

The submitted documents from the applicant comply with the requirements of ЗРАСРБ, ПИЗРАСРБ and the rules on the Terms and Conditions for Acquisition of Academic Degrees and Occupation of Academic Positions at Sofia University "St. Kliment Ohridski" (ПВРПИИНСЗАДСУ).

For the competition the candidate Assoc. Prof. Dr. Olga Ilieva Georgieva has submitted a list of 21 publications in Bulgarian and foreign scientific publications and scientific forums. They are distributed as follows: 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. A review at the end of October confirmed that twenty of the submitted publications were referenced in Scopus, but already referenced in Web of Science are 11. It is worth noting that 8 of the publications have members of international teams, and 6 co-authored with members of the Software Engineering department.

Also 14 other documents (in the form of job certificates from an employer, project manager, project sponsor or sponsor, references and other relevant evidence) supporting the applicant's achievements were also presented.

The documents are carefully systematized and described and greatly facilitate the assessment to meet the necessary requirements.

2. Applicant details

Assistant Professor Olga Georgieva graduated as a Master degree student in Process Control from the Technical University - Sofia. She was a doctoral student at the Central Laboratory of Bioinstrumentation and Automation at the Bulgarian Academy of Sciences. In 1995 she defended her thesis on "Modeling and Control of Batch Biotechnological Processes under Uncertainty". 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. Olga Georgieva has won scientific fellowships and has made scientific visits to universities in Germany, Belgium and Italy. 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.

3. General characteristics of the applicant's scientific work and achievements

The candidate Assoc. Prof. Olga Georgieva works in the field of data analysis and data mining mainly of real-time data.

The scientific works comply with the minimum national requirements (under Art. 2b, para 2 and 3 of the ЗПАЧРБ) with the total number of points per group of indicators significantly exceeded. They are also fully correspond with the additional requirements of the Sofia University "St. Kliment Ohridski" for the occupation of the academic position of "Professor" in the scientific field and professional direction of the competition

The scientific papers presented by the candidate are clearly separated and are of the years after the previous procedures for acquiring a scientific title and academic position, and as such do not repeat them. It is noteworthy that the systematic focus of the research is in the topics of Computer Science and Artificial Intelligence, and that all scientific publications submitted for participation in the competition were published in referenced and indexed in world-famous databases of scientific information - Scopus, Web of Science, MathSciNet.

There is no plagiarism proven in the scientific works presented at the competition.

4. Characterization and evaluation of the applicant's teaching activity

Currently Associate Professor Olga Georgieva is a lecturer of four courses in the programs of the FMI SU - two compulsory and two elective. One compulsory course is specialized in the Bachelor's Degree Program of Software Engineering. The other compulsory course is for Master's degree in Software Technology. One elective course is offered for the Bachelor's and Master's degree in Computer Science. The course is more popular with master students in the fields of artificial intelligence and information retrieval and knowledge discovery programs. The second elective course is offered in two master's programs and has always been guided by a full course.

From 1996 to 2007 O. Georgieva was a part-time lecturer in two compulsory courses at the Faculty of Computer Systems at TU – Sofia.

Assoc. Prof. Olga Georgieva is a scientific leader of successfully defended 11 graduates (10 diploma students from the FMI SU), as well as one doctoral student. She has one doctoral student with the right to defense and one current doctoral student.

The applicant has teaching activity abroad, having delivered four invited lectures at universities in Germany, Belgium and Portugal, as well as one full lecture course at the University of Applied Sciences in Braunschweig, Germany.

5. Comprehensive analysis of the scientific and applied scientific achievements of the candidate contained in the materials for participation in the competition

The applicant's authorship is clearly presented. The scientific and applied achievements of the candidate according to the scientific publications submitted for the competition are in the direction of extraction of information from data. They are relevant to the competition subject and are significant. I agree with the thematic division of the candidate's contributions into 7 new approaches, grouped as follows:

- New approaches to identify the data structure off-line and in real time.
- New approaches of software service selection accounting different metrics.
- 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 neural network model of the power consumption of arc furnace, a regression model for recognizing loss of attention, and a linear regression model for assessment of play style in educational games

They are applied in various fields of application - medicine, software development and more.

Based on the analysis of the materials provided, 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.

According to the presented reference of 21 articles, the candidate has 75 citations in Scopus, which are mainly from collections of scientific conferences. It is worth noting that one article has 27 citations, another one 23 and a third 17. Most of the citing works are from foreign authors, and only 1 quote is from Bulgarian authors. Outside of the competition, the author shows a reference for another 150 citations.

In summary, this citation is worthy of appreciation and proves the popularity of the results of Prof. Olga Georgieva among the scientific community in Bulgaria and abroad.

Out of the 21 publications presented, 5 are standalone and in 9 the candidate is the first author. Considering the subject matter and style of the publications, there is no doubt that they were prepared with the active participation of Assoc. Prof. Dr. Olga Georgieva.

6. Critical notes and recommendations

I would recommend Assoc. Prof. Olga Georgieva to pass on her experience and knowledge to more PhD students to participate in research work on data retrieval.

7. Personal impressions for the applicant

Olga Georgieva and I have known since 2007, when she was involved as a part-time lecturer in the course "Models of Software Systems" - a compulsory course at the MP "Software Technologies", which she is leading till now. That same year, she participated in a competition for Associate professor in Informatics at the Department of Software Engineering, of which I was a reviewer. Even then, I was impressed by her in-depth research and results, which were also demonstrated at this competition. By joining the department, Assoc. Prof. Olga Georgieva has won the respect and trust of colleagues and logically since 2014 has been the head of the department where her personal qualities of tolerance and principle are manifested.

8. Conclusion on the application

Having become acquainted with the materials and scientific works presented in the competition and on the basis of the analysis of their importance and the scientific and applied contributions contained therein, **I confirm** that the scientific achievements meet the requirements of the ЗРАСРБ and the rules for its implementation as well as the corresponding rules of Sofia University "St. Kliment Ohridski" for the academic position "Professor" in the scientific field and professional direction of the competition. In particular, the candidate Assoc. Prof. Dr. Olga Georgieva meets the minimum national requirements in the professional field and no plagiarism has been detected in the scientific papers presented at the competition.

I give my **positive assessment** to the application of Assoc. Prof. Dr. Olga Georgieva

II. GENERAL CONCLUSION

On the basis of the above, 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).

27.10.2019

Prepared the position:

(Prof. Dr. Sylvia Hristova Ilieva)