

## **REPORT**

by Prof. DSc **Ivan Nikolov Landjev**, New Bulgarian University

in the competition for the scientific position of “**professor**” in New Bulgarian University

Scientific Field: **4. Natural Sciences, Mathematics and Informatics**,

Professional Field: **4.6. Informatics and Computer Science**

announced in “**Darzhaven vestnik**” No 65/12.08.2022

Candidate: **Assoc. Prof. Velina Todorova Slavova**

### **I. Fulfillment of the minimal national requirements and the requirements of the New Bulgarian University**

The documents related to this call contain an information sheet giving evidence for the fulfillment of the national requirements described in the corresponding material Law and the special requirements of the New Bulgarian University for the position of full professor. I agree with the presented data from which it becomes clear that the candidate fulfills completely the above mentioned requirements. For instance, in group G he presents 8 publications giving 228 points, whereas the requirement is 200 points; in group D he gives 15 citations amounting to 104 points, whereas the requirement is 100 points and so on. The candidate fulfills also the specific requirements of the New Bulgarian University.

The presented papers and citations have not been used for acquiring the degree “doctor” or in other previous applications of the candidate.

### **II. Research activities**

1. The habilitation text “Language, Concept Formation and Child Language Acquisition, An Information Modeling Approach” contains 160 pages of text; the list of references contains 270 titles. The book is published by the publishing house of the Bulgarian Academy of Sciences “M. Drinov”.

The monograph is based on the recent research of the author on the language as a system for data processing and data transmission, as well as on the related cognitive processes like concept creation, thought expression, mastering a language. The book has a theoretical as well as practical importance. The book is structured in four chapters. In chapter 1 the author considers the so-called associative model for understanding a text expressed in a natural language. Chapter 2 is devoted to the cognitive models, considered in some sciences. In chapter 3 a statistical analysis of the childrens speech is made. In chapter 4, the author presents a model for concept formation. She considers also the units of meaning in the semantic memory of humans. The reviews and peer reviews on the book presented in the documents are extremely positive.

The contributions of the candidate with this book can be attributed in a larger degree to the applications than to the theory.

2. The research which becomes evident from the presented scientific publications can be structured in several subjects all of which are very modern and important for the applications. These include: (1) investigations in the area of cognitive science and artificial intelligence related to emotion recognition from speech and facial expression; (2) investigation and various applications of information technologies into the cognitive science; (3) application of methods and results from the area of artificial intelligence towards modeling, formalization and empirical verification of parts of complex cognitive processes; (4) design, modeling, development and implementation of software products in the area of expression of emotions in communication.

All publications presented by the candidate are indexed in one or more of the following: Web of Science, Scopus or IEEE Xplore. The papers presented in the candidate's application are published in the following journals:

- Cybernetics and Information Technologies (SJR 0.42) - 3 papers
- International Journal of Cognitive Research in Science Engineering and Education (SJR 0.345) - 2 papers
- Psychology in Russia: State of the Art (SJR 0.231) - 1 paper
- Procedia Computer Science (SJR 0.569) - 1 paper
- Proceedings of the 21<sup>st</sup> Symposium INFOTECH-JAHORINA (INFOTEH), IEEE Xplore - 1 paper

Seven of the publications have SJR and are in the groups Q2 or Q3 of Scopus. In six papers the candidate is the only author, while in the remaining two she has one co-author. For me there is no doubt that the contribution of the candidate in the joint publications is at least equal to that of the other co-author.

3. The candidate provides a list of 15 citations of her scientific papers. This shows that her scientific output is well-known and highly valued in the circle of the researchers in the area of cognitive science and computer linguistics. The candidate includes only citations that are indexed in the most well-known databases admitted in the material law and the related regulations: Web of Science, Scopus, IEEE Xplore.

4. Assoc. Prof. Slavova has taken part in many educational and scientific projects some of which are the following:

- the COBBALT project for the development and the introduction of a first version of the platform WBLST (Web Based Learning in Science and Technologies)
- the project MASTER-FOAD "Virtual university in Pays de la Loire" for the development of common courses for distance learning;
- the project EU-FP7 Aliz in cooperation with the Free University of Brussels for the development of instruments for artificial intelligence for small social robots.

### **III. Teaching activities**

Velina Slavova is very active as a teacher and is covering a large spectrum of courses in the New Bulgarian University. I would stress here fundamental courses for the programs in the New Bulgarian University like CSCB214 "Introduction to algorithms and programming", CSCB323 "Data structures", CSCB326 "A tutorial in data structures", CSCB536 "Modelling

and implementation of relational data bases”, CSCB 817 “Natural Language Processing”, as well as the course NFD002 “Natural Language Processing” which is taught in English. As a whole, the teaching load of Velina Slavova exceeds the average load of a teacher at the New Bulgarian University.

Assoc. Prof. Velina Slavova has developed teaching materials in all the disciplines she teaches. In addition, she is very active in supervising diploma theses of student from all programs in department “Informatics”, in writing reviews for diploma theses, supervising student projects, in taking part in various scientific juries and panels for state exams.

#### **IV. Administrative and community activities**

In different periods of her engagement at the New Bulgarian University Velina Slavova has served as a department chair of Department Informatics, as a Director of the program “Informatics”, as a member of the faculty council of the Bachelors faculty, as well as a member of the Academic Council of the New Bulgarian University.

#### **V. Personal comments**

I have known Velina Slavova for twenty years. She is with the Department of Informatics at the New Bulgarian University since 1994. I have the most favorable opinion of her professional capabilities and her commitment to the teaching and research activities of the department. In addition, all the application documents are well prepared and very handy to work with.

#### **VI. Critical remarks**

I would refrain from critical remarks and suggestions for future work. At this level the candidates have a very clear idea for their research and publication activities. The standard remark here is to suggest publication in journals of high impact. But this depends clearly on the research area in which the candidate is working.

#### **VII. Conclusion**

Velina Todorova Slavov is an established specialist in the area of computer linguistic and cognitive science. During the years she has been the author of a large amount of scientific papers which are highly valued internationally. She is actively engaged in extensive teaching activities mainly in the New Bulgarian University where she is the author and leading teacher of many courses. She was the supervisor of diploma theses, the author of a monograph book in linguistics and cognitive science and has served on various juries and panels. A plagiarism of any kind could not be established.

In my opinion, the candidate fulfills all requirements of the Bulgarian Law for the promotion of the academic staff, as well as the special requirements of the New Bulgarian University. I estimate **positively** the application of Assoc. Prof. Velina Todorova Slavova and advise this Scientific Jury to propose the candidate to the Academic Council of the New Bulgarian University where she should be voted for the academic position of full professor in the scientific field: 4. Natural Sciences, Mathematics and Informatics, professional field: 4.6. Informatics and Computer Science.

Sofia, 04.12.2022

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