

OPINION

by **Prof. DSc. Daniela Ananieva Orozova**

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of the materials submitted for participation in the competition

for the academic position of "**Associate Professor**" at the

University of Plovdiv "Paisii Hilendarski"

in: field of higher education 4. Natural sciences, mathematics and computer sciences

in professional field 4.6 Informatics and computer sciences (Informatics – Databases)

In the competition for "Associate Professor", announced in State Gazette No. 98 /19.11.2024 and on the website of University of Plovdiv "Paisii Hilendarski" for the needs of the Department of Computer Systems at the Faculty of Mathematics and Informatics, Assist. Prof. Georgi Nikolov Cholakov, PhD, Department of Computer Systems, Faculty of Mathematics and Informatics at University of Plovdiv "Paisii Hilendarski" participated as the only candidate.

1. General presentation of the procedure and the candidate

The documents submitted by the candidate in the competition correspond to the requirements of the Development of Academic Staff Act in the Republic of Bulgaria (ADASRB) and the Regulation for application of ADASRB and Additional requirements for the academic position "Associate Professor" of the Faculty of Mathematics and Informatics.

According to the terms and conditions for occupying the academic position "Associate Professor" from the Regulations for the application of the Law on the Development of the Academic Staff in the Republic of Bulgaria:

Assist. Prof. Georgi Cholakov, PhD meets the conditions of Art. 53(1).1 as he submitted the Diploma for the educational and scientific degree PhD - No. № 1000074, dated 16.09.2013.

Assist. Prof. Georgi Cholakov, PhD meets the conditions of Art. 53(1).2 because he works on a basic employment contract (with Rector's order No. No. P34-90/25.04.2005) in the Department of „Computer systems“ of the Faculty of Mathematics and Informatics at Plovdiv University "Paisii Hilendarski" and has more than 13 years of experience as a "chief assistant" (Certificate No. RD-38-267/26.11.2024).

Assist. Prof. Georgi Cholakov, PhD meets the conditions of Art. 53(1).3 because he presents Habilitation thesis – monograph: *G. Cholakov, “Augmented intelligence through software agents*

and artificial intelligence in a distributed e-learning center (DeLC)”, Plovdiv University Publishing House, 2024, ISBN 978-619-7768-02-2.

Assist. Prof. Georgi Cholakov, PhD has submitted a list of 10 publications for participation in the competition indexed in the scientific databases Scopus/Web of Science, four of which are IF in WoS (three publications with Q4 and one with Q3). He has also published a book based on his defended dissertation: *G. Cholakov, “Hybrid Architecture for Building a Distributed Learning Center (DeLC)”, Plovdiv University Publishing House, 2024, ISBN 978-619-7768-04-6,*

The presented "List of citations of scientific papers for participation in the competition" includes a total of 11 citations indexed in the scientific databases Scopus/Web of Science (of which 7 in SCOPUS and 5 in WoS).

Assist. Prof. Georgi Cholakov, PhD has presented other original research papers and other scientific and applied scientific developments. Participation in the teams of 2 international and 3 national research projects. Has published a university textbook, which is used in the school network: *G. Cholakov, M. Veselinova, "Textbook on Databases", University Publishing House "Paisii Hilendarski", 2020, ISBN 978-619-202-540-3.*

Assist. Prof. Georgi Cholakov, PhD meets the minimum national requirements for the occupation of an academic position “Associate Professor” in professional field 4.6 Informatics and computer sciences. According to the submitted documents, the candidate for the competition covers: 50 points by group of indicators A; 100 points by group of indicators B; 281 points by group of indicators G; 80 points by group of indicators D, 80 points by group of indicators E. Therefore, the minimum national requirements a from Regulation for application of ADASRB for occupying the academic position "Associate Professor" in professional field 4.6. Informatics and computer science are covered. The additional requirements adopted by the Faculty Council of the Faculty of Mathematics and Informatics at the University of Plovdiv “Paisii Hilendarski” have been met.

After a detailed review of the presented scientific works, I found that:

a) The scientific works meet the minimum national requirements of the Development of Academic Staff Act in the Republic of Bulgaria and respectively the additional requirements of the Plovdiv University „Paisii Hilendarski“ for the academic position of “Associate Professor” in the scientific field and professional direction of the competition.

b) The scientific works presented by the candidate do not repeat those from previous procedures for acquiring a scientific title and academic position.

c) There is no evidence of plagiarism in the scientific works submitted for the competition.

2. General characteristics of the candidate's activities

Assist. Prof. Georgi Cholakov, PhD teaches as a full-time assistant at the Department of Computer Systems at the Faculty of Mathematics and Informatics of Plovdiv University from 2005 to the present. He teaches bachelor's and master's classes in the courses: Databases, Java Practicum and Oracle Programming with PL/SQL. He assists in the development and implementation of teaching materials in these courses. He participates in the publication of a textbook on "Databases", as well as in the creation of test questions that are used in exam tests and control tests for students in the DeLC educational portal.

Throughout his teaching career, Assist. Prof. Georgi Cholakov, PhD is actively involved in the extracurricular activities of students by assigning coursework and homework and checking them. He works with graduate students, participates in scientific seminars at the department, and has published joint articles with students.

Participates in committees for the State Examination and defense of diploma theses for bachelor's and master's degrees at the Faculty of Mathematics and Informatics. He is a member of the faculty accreditation committee for two terms in the period between 2016-2024.

The research activities of Assist. Prof. Georgi Nikolov Cholakov, PhD are in the current areas of: databases, software technologies and e-learning, which is a prerequisite for good results in the educational process.

The main contributions in the scientific papers submitted by the candidate for participation in the competition can be grouped into three thematic areas: databases, agent-oriented architectures and e-learning. The candidate's contributions are mainly of a scientific-applied and applied nature:

- The extended architecture of the DeLC e-learning portal with an agent-oriented environment is presented. A model of a software agent is proposed that builds a student profile, storing data about his personal development in a given course [1, 3, 10].

- An approach for data extraction and analysis from the work of the Evaluator agent related to student assessment in the DeLC environment is presented [8, 9].

- Analyses have been conducted and an extension of the knowledge base of the software agents (Evaluator and FraudDetector) has been developed using large language models through integration with ChatGPT, to increase their accuracy in assessing students [11, 12].

- The problems in developing a system for crawling Internet sites (using the Node-RED tool) and extracting metadata for language models in different languages, which are stored in a relational database and can be retrieved and visualized using the Grafana tool, were explored [4, 5].

- Knowledge bases in the fields of software engineering, smart agriculture and cultural and historical heritage have been created in the form of ontologies, processing knowledge from ontologies have been discussed [2, 6, 7].

The used numbers correspond to the list of scientific papers for participation in the competition for the academic position of "Associate Professor".

3. Critical remarks and recommendations

The documents show a successful and productive research activity of Assist. Prof. Georgi Cholakov, PhD. I would recommend the candidate further independent publication activity.

CONCLUSION

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 Development of Academic Staff Act in the Republic of Bulgaria, the Regulations for its implementation and the corresponding Regulations of the Plovdiv University „Paisii Hilendarski“ for the candidate to occupy the academic position of “Associate Professor” in the scientific field and professional direction of the competition.

I hereby state my positive assessment of the application of Assist. Prof. Georgi Cholakov, PhD.

Based on the above, I recommend that the Scientific Jury prepare a report-proposal to the Faculty Council of the Faculty of Mathematics and Informatics at the University of Plovdiv "Paisii Hilendarski" to choose Assist. Prof. Georgi Nikolov Cholakov, PhD to occupy the academic position of "Associate Professor" at the University of Plovdiv “Paisii Hilendarski” in: scientific field 4. Natural Sciences, Mathematics and Informatics, professional field 4.6. Informatics and Computer Science (Informatics - Databases).

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Prepared the opinion:
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