

OPINION

by Prof. Evdokia Nikolaeva Sotirova, PhD

University “Prof. D-r Asen Zlatarov” - Burgas

of a dissertation for awarding the educational and Doctor of Philosophy (PhD)

in the field of higher education: 4. Natural Sciences, Mathematics and Informatics;

Professional field 4.6. Informatics and Computer Science,

Doctoral Program Informatics

PhD student: Hristo Konstantinov Blidov

Topic: Intelligent methods processes analysis in justice administration

Supervisor: Corr.-Member Lyubka Atanasova Doukovska

1. General presentation of the procedure

The opinion was drawn up on the basis of order No. 246/14.09.2022 of the Director of the Institute of Information and Communication Technologies, Bulgarian Academy of Sciences (BAS) Prof. G. Angelova, PhD, DSc and Protocol No. 1, by which I was designated as a member of the scientific jury for preparing opinion on the procedure for the defense of a PhD thesis with topic “Intelligent methods processes analysis in justice administration” with author Hristo Konstantinov Blidov, for the acquisition of an educational and scientific degree “PhD” in the field of higher education 4. Natural sciences, mathematics and informatics, Professional field 4.6. Informatics and Computer Science, Doctoral Program “Informatics”.

The materials presented by Hristo Konstantinov Blidov is in accordance with the Regulations on the terms and conditions for acquiring scientific degrees and for holding academic positions in the Bulgarian Academy of Sciences.

2. General assessment of the dissertation research

Actuality of the topic

The main accent of the research is the application of intelligent techniques for the analysis of processes in the administration of justice. The application of tools allowing modeling of such processes is definitely innovative and I am convinced of their usefulness. This supports a high level of applicability of the PhD thesis. The PhD thesis is current.

Knowing the problem

Hristo Blidov demonstrates competence in the issues related to the field of his research and the need to develop the PhD thesis. He demonstrates good theoretical knowledge and practical skills on the subject, which is a basis for competently realizing the goal set in the PhD thesis,

formulating and evaluating the problems, presenting and justifying the research, analysis and results obtained.

Research methodology

I find the methodology used by the PhD student to achieve the formulated goal and the tasks corresponding to it expedient, convincingly motivated and suitable for the successful implementation of the research, which is evident from the results obtained.

Characterization and evaluation of the dissertation work

The PhD thesis of Hristo Konstantinov Blidov contains 152 pages. It consists of an introduction, three chapters, a conclusion, a summary of the obtained results, directions for future research, publications on the topic of the PhD thesis, a declaration of originality of the results and a bibliography. The bibliography contains 130 literary sources, of which 20 are in Bulgarian, 110 in English.

An introduction to the subject is made in the *Introduction section*; the goal of the development is presented: "*with the means of modern paradigms from the field of intelligent systems to analyze the processes in the administration of justice*"; eight main tasks were defined; the structure of the dissertation is presented. In *Chapter 1* is an introduction to the judicial process, and *Chapter 2* competently presents the intelligent methods that were used for the analysis of complex systems - generalized networks, intuitionistic fuzzy sets, indexed matrices. Following the theoretical studies and analyses, *Chapter 3* presents the developed five generalized network models and the defined intuitionistic fuzzy estimates for the state of the judicial process at a certain point in time.

A summary of the results of the work is made in the *Conclusion*; the main contributions in the dissertation work; on page 109, the contributions, tasks, the place of description in the dissertation and the realized publications are reflected in a tabular form.

The PhD thesis is carefully developed and well balanced. Critical analysis of the problem area shows the good awareness of the PhD student. The studies were done correctly, following the tasks set. The presentation of the designed and developed game architecture of serious games is comprehensive, very well argued and well-illustrated. A clear and competent scientific style is used.

3. Assessment of the publications and personal contribution of the PhD student

According to the *List of scientific publications* presented by Hristo Blidov, he has 6 scientific works in English, all referenced and indexed in the world-famous databases of scientific information. Of these, three publications are in Lecture Notes in Networks and Systems, of Springer International Publishing ([1], [4] and [6]) and three are in IEEE conference proceedings ([2], [3] and [5]). In all publications, the PhD student is the first author. All publications are entirely on the subject of the dissertation.

The topicality of the topic and the active position of the doctoral student are complemented by the application of the results of his research in 2 research projects.

I highly appreciate the work of the PhD student.

4. Contributions and significance of the development

I believe that the contributions in Hristo Blidov's dissertation work are scientific-but-applied and applied, and I summarize them as follows:

- 1) Five generalized net models have been created - of the first phase of the first-instance proceedings from the general claim process, the second phase of the first-instance proceedings from the general claim process, the appellate proceedings from the general claim process, the cassation proceedings from the general claim process, of the proceedings for annulment of an effective court decision;
- 2) An Intuitionistic fuzzy assessments of the state of the legal process at a certain point in time have been developed - for evaluating claims; to assess the state of affairs; to assess the claims from the plaintiff's point of view in pending cases; to assess the claims from the plaintiff's perspective as a result of the case.

The possibilities and ideas for future work presented by the doctoral student support the significance of the development.

The obtained scientific-applied and applied results are original. They fully correspond to the goal set in the dissertation work.

5. Abstract of PhD thesis

The abstract contains 34 pages. It is well structured and correctly reflects the structure of the dissertation work, the results obtained and the conclusions drawn from the study.

6. Conclusion

My assessment of Hristo Konstantinov Blidov's PhD thesis, abstract, publications and scientific activity is entirely positive. The PhD thesis contains scientific-applied and applied results, which represent an original contribution to science and show that the doctoral student has in-depth theoretical training, opportunities for critical analysis and independent conduct of scientific research.

The PhD thesis fully meets the requirements of the Law on the Development of the Academic Staff of the Republic of Bulgaria, the Regulations for its implementation, as well as the criteria of the Regulations for the specific conditions for acquiring scientific degrees and for occupying academic positions in the Institute of Information and Communication Technologies.

This gives me a reason to confidently recommend to the respected members of the Scientific Jury to award Hristo Konstantinov Blidov the educational and scientific degree "PhD" in professional field 4.6 "Informatics and computer sciences", PhD program "Informatics".

29.10.2022 г.

Burgas

Prepared

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