REVIEW

from professor Daniela Borissova, D.Sc. – Institute of Information and Communication Technologies – BAS

ABOUT: Dissertation thesis of Nektarios Moumoutzis entitled "Operational Conceptual Modeling in Building and Sustaining Virtual Communities", presented for the acquisition of educational and scientific degree "doctor" in a doctoral program "Informatics", Professional field 4.6. "Informatics and Computer Science"

According to order No 208/20.07.2022 of the Director of the Institute of Mathematics and Informatics (IMI) at BAS, I am determined to be a member of the scientific jury, and according to the protocol of the first meeting held on 21.07.2022, I am determined to prepare a review. For this purpose, I have received all the documents submitted by the applicant under the procedure.

ACTUALITY

The presented dissertation examines an interesting and current topic related to the problems of building virtual communities through the use of digital technologies, following the current trends promoting individual learning, based on a personalized approach to the use of technology and learning, through the cooperation between different people to achieve common aims.

KNOWLEDGE OF THE PROBLEM

From the overview made, as well as from the published results on the topic of the dissertation work, it can be established that the doctoral student is well aware of the nature of the researched issues. Additional proof of this is the

presence of a program implementation of the proposed architectural structure for creating and maintaining Onlife communities.

ANALYTICAL CHARACTERISTIC

The presented dissertation has a total volume of 164 pages and is structured as follows: title page, table of contents, acknowledgments, introduction, 5 chapters, conclusion, contributions, statement of originality, approval of results and future work, list of tables, list of figures, list of used abbreviations, 2 appendices, bibliography, list of publications on the topic of the dissertation work. This structure corresponds to the requirements defined in Art. 27 para. (2) of the Regulations for the implementation of the Law on the Development of the Academic Staff in the Republic of Bulgaria. On pages 10-16, the purpose and tasks of the dissertation research are formulated.

Chapter 1 presents the motivation, goals and tasks of the dissertation research. Chapter 2 reviews the underlying concepts, and software platforms that were subsequently used as a starting point to validate the proposed framework. Important concepts, issues, and digital infrastructures are presented that target communities of users with learning and educational goals, as well as the development of digital artifacts that enhance creativity and support artistic interventions. Some aspects of the concept of performativity, the connections between theater and computational research in human-computer interaction, and how digital systems can be used to enforce and enhance contingent relationships, thereby contributing to the idea of universality, are described. An analysis is also made of how the idea of virtual communities can be extended by using the current developments included in the Onlife Manifesto.

Chapter 3 of the dissertation focuses on the PerFECt framework. PerFECt (Performative Framework to Establish and Sustain OnLife Communities) is based on important concepts such as the concept of performativity, which emphasizes the fact that human behavior can be understood and analyzed by assuming that all human practices are performed in such a way that actions can be seen as a public presentation of oneself. An online community within the PerFECt framework captures the structure that is imposed by the framework's

four user roles: end-user, expert-user, maieuta-designer (who is responsible for designing the end-user development environment), and meta-designer along with the artifacts, tools, and even basic physical objects to account for situations where technology is embedded in the underlying reality. Embracing the concept of community emphasizes the fact that all these user roles, through their interactions within the two processes of co-evolution, create a larger body of people who engage with other people as well as with machines and natural beings in conscious interactions, thereby creating the social contexts described as communities of online life to account for hyper-connectedness as well.

Chapter 4 describes how the PerFECt framework is used to create and maintain real-life learning communities. An application of the PerFECt framework to specific situations for creating and maintaining online learning communities is presented.

Chapter 5 summarizes experimental work that confirms the applicability of the PerFECt framework and demonstrates its effectiveness in expanding and enriching the possibilities of creating and sustaining online living communities powered by appropriate digital technologies and tools.

RESEARCH METHODOLOGY

The chosen methodology, as well as the techniques and approaches used, correspond to the purpose and the tasks formulated in the dissertation work.

ABSTRACT AND AUTHOR'S REFERENCE

The submitted abstracts in Bulgarian and English faithfully reflect the content of the dissertation work. From the submitted declaration of originality, as well as from the published articles on the topic of the dissertation, it can be judged that the described results are the author's personal work.

ASSESSMENT OF COMPLIANCE WITH THE MINIMUM NATIONAL REQUIREMENTS

A total of 16 publications are presented on the subject of the dissertation research, 2 of which are in print. Five of the publications are in editions with SJR,

and 8 are indexed in the databases Scopus, and Web of Science. The total number of points from the presented and published articles significantly exceeds the minimum national criteria for the acquisition of the educational and scientific degree “doctor” in the professional field.

CONTRIBUTIONS

The main scientific and scientific-applied contributions of the candidate can be summarized as:

1. Development of PerFECt, a performative architectural structure for creating and maintaining Onlife communities, based on a conceptual framework, including models and specific guidelines for using digital systems to give new opportunities to such communities, improved as a result of the analyzes performed. Organizing a number of community-building initiatives that use the PerFECt architectural framework, linked to specific digital tools and targeting specific areas of learning and creativity.
2. Development and refinement of eShadow tools inspired by Greek traditional shadow theater and use to establish and maintain communities in digital cultural heritage.
3. Development and improvement of ViSTPro, a platform for visualization of spatio-temporal processes that enables a rich learning experience in various fields, including cultural heritage in general and history education in particular.
4. Development and improvement of Coursevo, a community building and distance learning platform that facilitates the building and support of communities of practice and learning.

CONCLUSION

The obtained results on the topic of the dissertation convincingly show that the doctoral student Nektarios Moumoutzis has the necessary theoretical knowledge and practical skills in the field of informatics and computer science, as well as proven abilities for independent scientific research. The presented dissertation meets the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Rules for its implementation, as well as the Rules for the Specific Conditions for Acquiring Scientific Degrees and for Holding Academic Positions at IMI-BAS. The obtained results on the subject of the dissertation research give me sufficient reason to give a categorically positive assessment of the dissertation work thus presented and **I propose to the honorable Scientific Jury to award Nektarios Moumoutzis educational and scientific degree "doctor" in a doctoral program "Informatics", Professional field 4.6. "Informatics and Computer Science".**

29 September 2022 Reviewer: .....….

/prof. Daniela Borissova, D.Sc./