

# STATEMENT

on the competition for the academic position

“Associate Professor”

in professional field 4.6 Informatics and Computer Science (Programming and Algorithms),

at Sofia University “St. Kliment Ohridski” (SU),

Faculty of Mathematics and Informatics,

announced in State Gazette No.65/16.08.2019 г. and the internet sites of FMI and SU

This statement is written and submitted by *Assoc. Prof. Kalin Georgiev, PhD, FMI, Informatics and Computer Science*, appointed to the academic jury for this competition by the Rector of SU in accordance with Order 38-591/11.10.2019 г.

A **single candidate** has submitted an application for this competition:

- Assist. Prof. Nora Angelova, PhD, FMI

## I. General Description of the Submitted Documents:

### 1. Application Details

The documents submitted by the candidate are in full compliance with the requirements of the Academic Staff Development Act (ZRASRB), the Regulations Act for the Implementation of ZRASRB (PPZRASRB), and the Regulations Act about the Terms and Conditions for Acquisition of Academic Degrees and Occupation of Academic Positions at SU (PURPNSZADSU).

For the purposes of the competition Assist. Prof. Nora Angelova, PhD has presented a total of 23 titles, including 23 publications in domestic and international scientific issues and conferences.

The candidate has not submitted any further documents in addition to the documents required by way of procedure.

### 2. Short Biographical Data

Assist. Prof. Nora Angelova, PhD obtained a bachelor degree in Informatics from FMI in 2012, a master’s degree in “E-business and E-government” from FMI in 2013, and a Doctor of Philosophy degree in Informatics from the Institute of Biophysics and Biomedical Engineering” (IBfBmE) at the Bulgarian Academy of Sciences in 2017.

The candidate has a work experience of 7 years during which she accumulated experience in two directions: (1) academic experience at FMI (5 years as a teaching assistant and 2 years as an assist. prof); and, (2) in the software industry (7 years as a senior software engineer).

At FMI the candidate has conducted laboratory exercises and lectures from the mandatory programming curriculum. She has successfully advised the master’s theses of two students and is currently an acting academic mentor.

At IBfBmE the candidate has participated in two scientific projects funded by NSF. The candidate is a member of the unions of Bulgarian Mathematicians and Bulgarian Scientists.

### **3. General Evaluation of Scientific Work and Professional Achievements**

Of the works submitted by the candidate, 5 are in journals with impact rang or impact factor, 10 are in international journals or conference proceedings, 3 are accepted for publishing for which a documented proof is submitted.

After a detailed review of the submitted scientific publications I confirm that:

- a) the sumitted publications are in full compliance with the minimal national requirements under Art. 2B (2) and (3) of ZRASRB, as well as with the additional requirements of SU for the academic position “Associate Professor” in the professional field of this competition;
- b) none of the submitted publications have been submitted in a preceding procedure for acquiring a scientific title or an academic position;
- c) there is no lawful evidence for plagiarism in the submitted publications.

### **4. Description and Evaluation of Teaching Activities**

Assist. Prof. Nora Angelova, PhD has a 9 years career in teaching, which starts as early as her student years with laboratory exercises in Programming. Since then a considerable volume of classes have been conducted by the candidate, who is also an acting academic mentor and advisor of master’s students.

During the current academic year 2019/2020 the candidate and myself are working together on the organisation of the mandatory course in Introduction to Computer Programming for the Computer Science program. Our mutual work includes the management of the large team of 24 teaching assistants and the preparation of examination materials. Thanks to our collaboration, I have had the opportunity to personally familiarize with the training materials prepared by Prof. Angelova.

My impressions are excellent form both the academic and administrative work of the candidate. The organisational work is always done on time with outstanding quality. The teaching materials are detailed, clear, and according to FMI’s best traditions in teaching Computer programming.

The active work experience in the software industry is an important advantage for the candidate as a lecturer in Computer Programming. The real industrial experience with the applications of technology, together with the current and deep technological knowledge accumulated trough this experience, are a guarantee for high quality, relevant, and up-to-date teaching process.

### **5. Analysis of the Content of the Theoretical and Applied Contributions Described in the Submitted Publications**

The candidate Assist. Prof. Nora Angelova, PhD has submitted works in the following areas:

#### **i. Generalized Nets (GNs)**

The category contains a number of papers regarding the apparatus of GNs addressing various theoretical issues regarding the GN formalism, its properties, optimizations, enhancements, and improvements.

The problem of formal verification of GNs has been addressed by defining a modification of Floyd’s Inductive Assertions method for the case of GNs.

GN models have been applied in areas such as software security and the modelling of forest fires.

#### **ii. Intuitionistic Fuzzy Sets (IFS)**

This category contains a collection of papers considering the theoretical properties of IFS and the formal logics based on IFS. Various new operations over

these logics have been introduced and analysed. The candidate has made contributions to a software system for the automatic analysis of the properties of IF implications, negations, conjunctions, and disjunctions.

iii. “Intercriteria” analysis

“Intercriteria” analysis is a decision making method based on IFS and “indexed matrices”. Modifications and enhancements of the method have been proposed. Various applications have been explored, such the modelling of waste water treatment.

iv. Others

A modification of *Conway’s Game of Life* has been proposed in three dimensional space.

## 6. Critical Remarks and Recommendations

Despite the considerable load of teaching Programming courses, which are among the most resource demanding courses at the FMI, my recommendation for the candidate is to consider organising or participating in elective courses in more specific subjects, where the candidate can apply her rich experience with specialized industrial technologies.

## 7. Personal Impressions

I know Assist. Prof. Nora Angelova, PhD since her very first years as a teaching assistant at the FMI. Her performance has been nothing but outstanding both as a students and an educator. It is my strong opinion that Assist. Prof. Nora Angelova, PhD is a worthy descendant of FMI’s best traditions in the Computer Science education. I have personally observed her working style and am impressed by her responsible and enthusiastic work attitude.

## 8. Conclusion

Based on the review of the documents and scientific publications submitted for this competition, as well as on the analysis of their significance and the theoretical and applied contributions, I hereby confirm that the scientific achievements of the candidate meet and exceed the requirements of ZRASRB, PPZRASRB, and PURPNSZADSU for acquiring the academit position “Associate Professor” in the scientific and professional field of this competition. More specifically, the candidate satisfies the minimal national requirements of the professional field and no plagiarism has been detected in the submitted scientific publications submitted.

I hereby state my **positive** assessment of the application of Assist. Prof. Nora Angelova, PhD.

## II. GENERAL CONCLUSION

Based on the above, I hereby **recommend** to the scientific jury to propose to the competent authority of the Faculty of Mathematics and Informatics at Sofia University “St. Kliment Ohridski” to elect Assist. Prof. Nora Angelova, PhD to the academic position “Associate Professor” in professional field 4.6 Informatics and Computer Science (Programming and Algorithms).

November 28, 2019

Prepared by: \_\_\_\_\_  
*Assoc. Prof. Kalin Georgiev, PhD, FMI*