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SERDICA JOURNAL OF COMPUTING: THE FIRST TEN YEARS

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Abstract. *Serdica Journal of Computing* has completed its first decade. On this occasion we offer some notes, statistical and otherwise, on the first ten volumes of the journal, concerning the number of authors and papers, the geographical and institutional distribution of authors' affiliations, the structural semantic makeup, the dynamics of the editorial board, and various important developments in this period.

Serdica Journal of Computing is entering its second decade. This is a good time for summing up the first. We present some statistics on the overall number of authors and papers in the first ten volumes of the journal, and the geographical and institutional distribution of authors' affiliations. We review the rubrics and special issues and the dynamics of the editorial board. Finally we bring to memory some significant developments that have taken place.

1. Authors, papers, affiliations. The ten volumes comprise 38 issues (including 2 double ones), amounting to 4203 pages' worth of research papers, not counting editorial articles and other material.

ACM Computing Classification System (1998): A.0.
Key words: academic journal production, *Serdica Journal of Computing*.

All told, 246 papers have been published. They have been authored by 350 people, 271 of whom (77.43%) have contributed once and 79 (22.57%) two or more times (Fig. 1). Conversely, 107 (43.50%) of the articles are monographic,

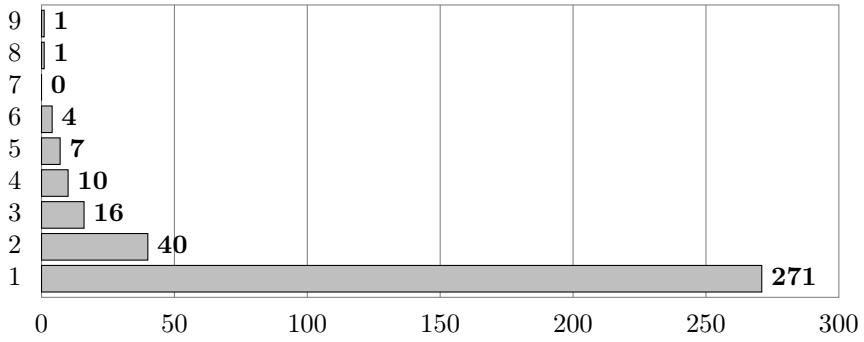

Fig. 1. x = number of authors with y papers

108 (43.90%) are coauthored by two or three people (64 and 44, respectively), and 31 (12.60%) by four or more (Fig. 2). Thus the papers have a total of 515

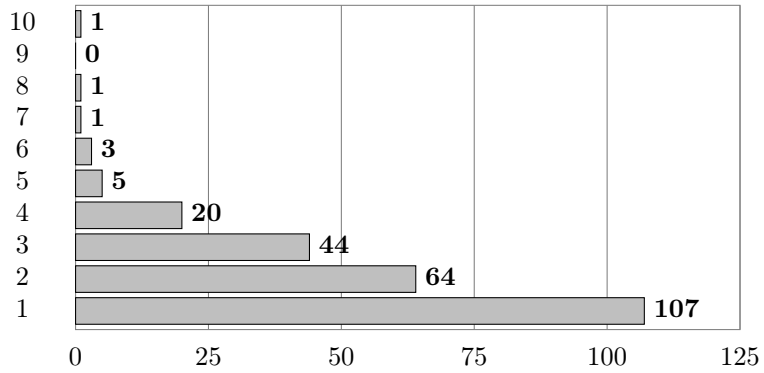

Fig. 2. x = number of papers with y authors

authorships. Since some authors work at more than one institution, there are 533 affiliations in all.

Our authors are located in 35 countries, mostly though not overwhelmingly from the one where the journal is produced: 290 (54.41%) affiliations are in Bulgaria and 243 (45.59%) are elsewhere (Fig. 3). The near-parity indicates that *Serdica Journal of Computing* is successful in fulfilling its double ambition of providing a platform to Bulgarian researchers and of being a full-fledged international publication.

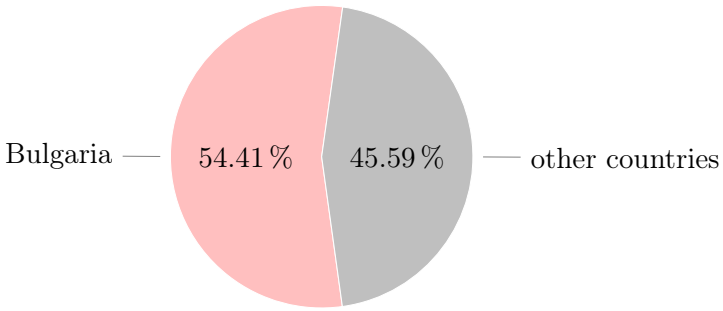

Fig. 3. Ratio of Bulgarian and non-Bulgarian affiliations

In Bulgaria there are 9 cities where authors hail from (Fig. 4). The lion's share of the affiliations is in Sofia, with 235 of them (81.03%); the rest are in Veliko Turnovo — 26 (8.97%), Plovdiv — 10 (3.45%), Blagoevgrad — 8 (2.76%), Varna — 6 (2.07%), Burgas — 2 (0.69%), and 1 (0.34%) each in Gabrovo, Shumen and Yambol.

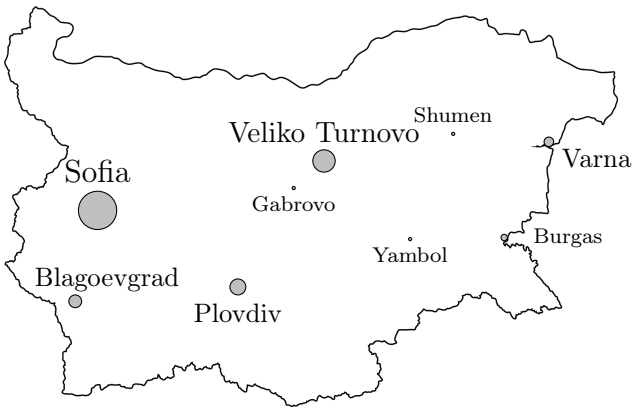

Fig. 4. Map of contributing Bulgarian cities

The Bulgarian Academy of Sciences (with addresses in Sofia and Veliko Turnovo) accounts for 141 (48.62%) of the affiliations. Very nearly as many – 138 (47.59%) – are with 20 other research and educational institutions. The remaining 11 (3.79%) are from industry, administration, etc. (Fig. 5).

Within the Bulgarian Academy of Sciences, the Institute of Mathematics and Informatics dominates with 101 affiliations (71.63%), leaving 40 (28.37%) to nine others among the Academy's institutes, laboratories and centres. The list of

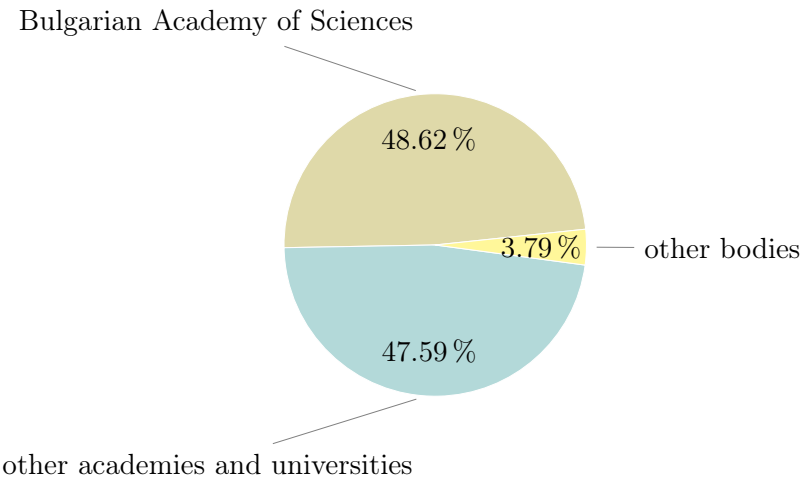

Fig. 5. Distribution of Bulgarian affiliations by type of institution

other academic organisations is led by the

- St Kliment Ohridski University of Sofia — 56 (19.31%),
- New Bulgarian University — 17 (5.86%),
- St Cyril and St Methodius University of Veliko Turnovo — 15 (5.17%),
- Technical University of Sofia — 10 (3.45%),
- Paisii Hilendarski University of Plovdiv — 9 (3.1%),
- Neofit Rilski South-West University of Blagoevgrad — 8 (2.76%),
- University of Library Studies and Information Technologies — 5 (1.72%),

followed by the Burgas Free University, Defense Institute, Technical University of Varna, University of Mining and Geology, Varna University of Economics (2 each), Agricultural Academy, Agricultural University of Plovdiv, Episkop Konstantin Preslavski University of Shumen, G. S. Rakovsky National Military Academy, Medical University of Varna, Sofia University of Forestry, Technical University of Gabrovo, and Varna Free University (1 each).

Among the other countries the foremost contributor is the USA with 38 affiliations (7.13%), followed by Germany — 26 (4.88%),

- Hungary — 19 (3.56%),
- Greece — 16 (3%),
- Iran — 14 (2.63%),
- Vietnam — 14 (2.63%),
- Serbia — 13 (2.44%),
- Belgium — 12 (2.25%),
- Japan — 12 (2.25%),
- the Russian Federation — 10 (1.88%),
- Canada — 9 (1.69%),
- Austria — 8 (1.5%),
- France — 7 (1.31%),
- the DPR of Korea — 5 (0.94%),

and then by Israel, the Netherlands, the UK (4 each), Georgia, Norway, Sweden (3 each), China, Czech Republic, India, Poland, Romania (2 each), Bosnia and Herzegovina, Finland, the Republic of Korea, Macedonia, Moldova, Slovakia, the Republic of South Africa, Switzerland, and Turkey (1 each). The percentages in the pie chart (Fig. 6) represent the distribution of non-Bulgarian affiliations.

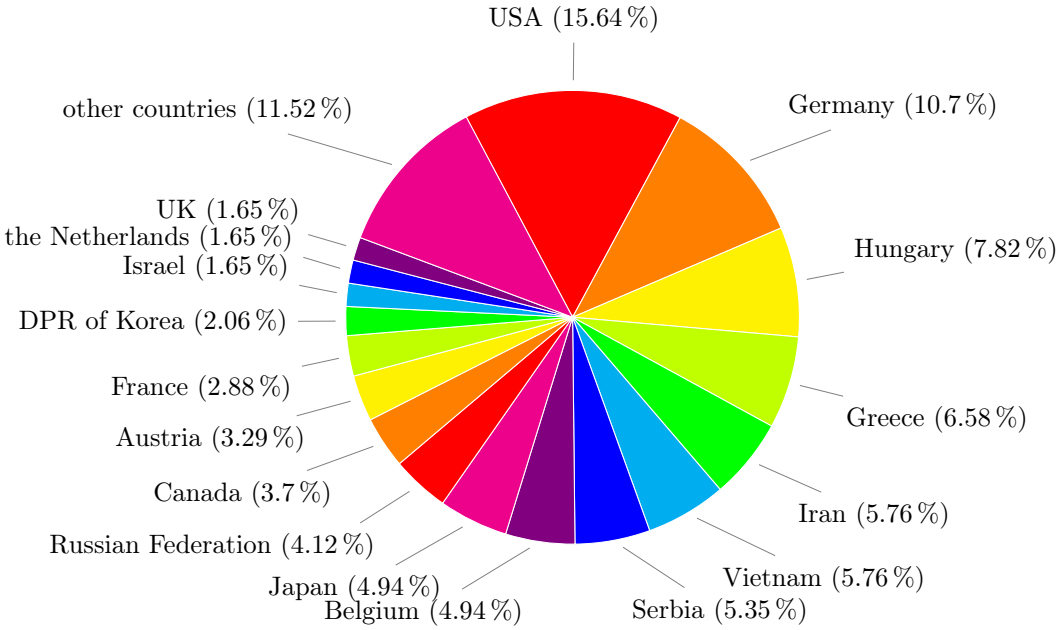

Fig. 6. Distribution of non-Bulgarian affiliations by country

2. Structural semantic makeup of the decade. The research publications in *Serdica Journal of Computing* come in three kinds (Fig. 7). The bulk – 167 (67.89%) – of the papers are regular articles, peer-reviewed by two, or occasionally three, experts after submission. A further 61 (24.80%) are pub-

lications in special issues on selected broad topics within or related to computer science. The remaining 18 (7.32%) are papers by young researchers reporting the results of their recently defended doctoral theses.

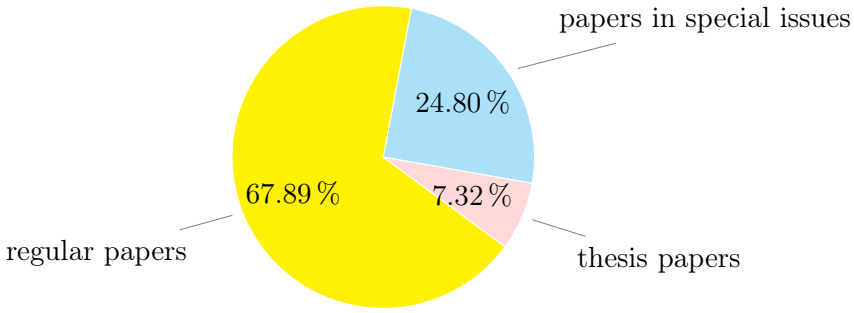

Fig. 7. Distribution of the papers by kind

Special issues. Eight special issues have been published in this period. Each is composed of invited papers or chosen talks from a recent scientific forum.

Issue **1**.2 (2007) was a special issue on **coding theory and cryptography**, presenting 8 papers from the special session on Coding Theory and Cryptography held at the 12th International Conference on Applications of Computer Algebra (Varna, Bulgaria, 26–29 June 2006). Guest editor: Tanush Shaska.

The special issue on **mathematical modelling and scientific computations**, **4**.1 (2010), contains 12 papers from the International Workshop on Mathematical Modelling and Scientific Computations (Velingrad, Bulgaria, 23–26 September 2009). Guest editors: Neli Dimitrova and Mikhail Krastanov.

Issue **4**.2 (2010) was a special issue containing selected contributions to the 1st International Conference on **Software, Services & Semantic Technologies** (Sofia, 28–29 October 2009). Editors: Avram Eskenazi and Radoslav Pavlov.

Extended versions of 11 papers presented at the Workshop on Astroinformatics, which was held during the 1st international conference on Digital Preservation and Presentation of Cultural and Scientific Heritage (Veliko Tarnovo, Bulgaria, 2011), were included in Issue **6**.1 (2012), a special issue on **Astroinformatics**. Editors: Peter Stanchev and Radoslav Pavlov.

Issues **8**.2 and **8**.3 (2014) were a pair of special issues containing 12 papers presented at the Flint International Conference on Statistics held at Kettering University (Flint, Michigan, 24–28 June 2014) and judged to be particularly relevant to computer science. Guest editors: Leszek Gawarecki and Boyan Dimitrov.

The 80th anniversary of **Professor Edward A. Friedman**, doyen of

the journal's editorial board since the beginning, was celebrated by a special double issue, **9**.3–4 (2015), containing 7 research articles and a variety of other material related to various aspects of Prof. Friedman's interests and activities, but chiefly with innovative approaches to teaching mathematics, informatics and natural science. Editor-in-charge: Evgenia Sendova.

Issue **10**.2 (2016) was a special issue on **digital culture**, which featured 4 papers on new visions of the use of digital technologies for presentation, study and promoting of cultural heritage. Guest editor: Desislava Paneva-Marinova.

Thesis papers. Starting with issue **2**.3 (2008), *Serdica Journal of Computing* has been publishing review articles containing the main results of recently defended Bulgarian doctoral theses in the domain of computer science, with the aim of efficiently acquainting a broader audience with the scientific accomplishments of promising young researchers. Naturally, such publications tend to be longer: the eighteen papers that have appeared in this rubric to date have an average size of 25 pages, which is one and a half times greater than the average size of the regular papers (16.7) and the papers in special issues (16). Four of their authors have become repeated contributors to the journal.

3. Editorial board. One of the most important ways in which *Serdica Journal of Computing* strives to heighten its standards and broaden its visibility is by maintaining a well-composed international editorial board.

Scholars located in Bulgaria have formed about half of the board at any time over the ten years (from 14 out of 24 in the beginning to 11 out of 26 at present). The other half is manned with people whose affiliations are in 9 other countries: Germany, Greece, Hungary, Israel, the Russian Federation, the USA, and in recent years, France, Italy, and the UK.

Eighteen of the current members of the Editorial Board have served on it since the founding of the journal: Niv Ahituv (Israel), Stavros Christodoulakis (Greece), János Demetrovics (Hungary), Milena Dobreva (Bulgaria/UK), Edward Friedman (USA), Gyula Katona (Hungary), Vladimir Kinelev (Russian Federation), Vladimir Zanev (USA), as well as Ivan Derzhanski, Avram Eskenazi, Alexander Gerov, Georgi Gluhchev, Krasimir Manev, Plamen Mateev, Radoslav Pavlov, Evgenia Sendova, Peter Stanchev, and George Totkov (Bulgaria).

The kernel of the editorial board consists of employees of the Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences, which is where *Serdica Journal of Computing* was initiated and every issue is finalised. The Institute also takes part in the distribution of the publication through the Academy's structures (by interlibrary exchange), and also acts as a launch pad

for contracts with the National Science Fund at the Ministry of Education and Science of Bulgaria, which has sponsored six volumes of the journal (24 issues, including this one).

4. *Serdica Journal of Computing* and computerisation. The last decade has seen an uncommon growth of the part that the computer plays at all stages of the life of a journal and of every article from writer's mind to reader's eyes. *Serdica Journal of Computing* has not only acted as a venue for publishing research in computer science and related fields, but it has also availed itself of the practical accomplishments of the information technologies. This goes beyond soliciting the submission of articles by electronic mail, coordinating their reviewing online and computerised preprocessing. The interaction with the Publishing House of the Bulgarian Academy of Sciences, where the journal has been given its physical form since the beginning, is also becoming progressively paper-free. Electronic access (by subscription to the most recent issues, and freely to older ones) is now offered, and although we do not envisage abandoning printing altogether (for one thing, it is essential for interlibrary exchange), many subscribers have moved from receiving and reading the journal on paper to doing so on the screens of their computers.

The age of information technologies has fortified and multiplied the global professional bibliographic databases, and *Serdica Journal of Computing* is making itself known to the academic world through a growing number of them: presently it is indexed and abstracted in Zentralblatt für Mathematik, VINITI, EuDML, Google Scholar, and OpenAIRE.

5. Conclusions. *Serdica Journal of Computing* has completed its first decade. In this period it has grown from being a fruitful idea of its founder and first editor-in-chief, the late Acad. Stefan Dodunekov, to becoming an acknowledged entity in the area of professional publications in its subject domain. It has developed its own style, earned experience, learned to resolve various problems, and gained recognition by the national and international research community.

Serdica Journal of Computing is entering its second decade.

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