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DIGITAL LEGACY OF PROFESSOR SLAVIŠA PREŠIĆ

Abstract. In this paper we present the website Digital Legacy of professor Slaviša Prešić. Professor Prešić was prominent Serbian mathematician and the former professor at the University of Belgrade. The website is an extension of the project of the Faculty of Mathematics in Belgrade - Digital Legacy, which consists of digital legacies dedicated to Serbian mathematicians: Milutin Milanković, Bogdan Gavrilović and Anton Bilimovič.

Introduction

Digital legacies is a project of the Faculty of Mathematics in Belgrade, which aim is to collect, digitize and present the rich legacy of prominent Serbian mathematicians. It consists of a group of websites that are dedicated to individual mathematicians. The main goal of Digital legacies is to make available the biography and scientific legacy of Serbian mathematicians to the general audience [1,2,3]. The Digital Legacy of professor Slaviša Prešić (http://legati.matf.bg.ac.rs/slavisa_presic.html), former professor of the Faculty of Mathematics in Belgrade, was developed as part of this project.

Professor Prešić conducted research in different branches of mathematics and also in computer science. He had a major role in the development of modern mathematics in Serbia (and former Yugoslavia). He published scientific papers in national and international journals in five different languages in the period 1960-2007. With his scientific work, professor Prešić gave multiple contributions to the development of mathematics and computer science.

The collected material from the rich legacy of professor Prešić includes books, scientific papers and audio and video material which witnesses the significance of his scientific work.

The website of the Digital legacy was created using the WordPress software tool, a free and open-source content management system.

Short Biography of Slaviša Prešić

Slaviša Prešić was a prominent Serbian mathematician, educator thinker and professor at the Faculty of Mathematics of the University of Belgrade.

Slaviša Prešić was born in Kragujevac in 1933. After completing the grammar school in Kragujevac, he started the studies of mathematics at the Faculty of Natural Sciences and Mathematics of the University of Belgrade in 1952. His complete academic and scientific career was associated with this Faculty. He graduated there in 1958 and immediately after graduation he became an assistant. Slaviša Prešić defended his PhD thesis "Contribution to the theory of algebraic structures" in 1963 and soon he was elected for an assistant professor. The Chair of Algebra was founded in 1965 and Prešić became the head of the Chair continuing to be in charge of ever since that time. He became an associate professor in 1970 and a full professor in 1979. He stayed at the Faculty until his retirement in 2000. Professor Prešić introduced a course of mathematical logic in undergraduate studies, and since then the Chair carries the name

the Chair of Algebra and Logic.

Professor Prešić didn't like routine and straightforward, neither lengthy and complicated proofs. These distinctive features form the basis of Prešić's entire work: his research, his books, his public speeches, no matter where they were made - at scientific conferences, expert meetings or popular talks. In his scientific papers and books completely new ideas and original ways of solving mathematical problems could be found. His public speeches and discussions are remembered by the picturesque and vital language and open criticism, with the help of which he immediately presented to the audience the essence of some mathematical problem or theory. On such occasions, the audience never remained indifferent. His opponents used to stay after the lecture in order to discuss, and they often left with their opinion changed or at least less convinced that their point of view was right.

Another feature of Prešić's works is originality. His novelties had in several cases resulted in completely new methods and theories. An example of this kind is the reproductivity theory as one of the rare universal methods in solving general equations. Prešić showed how the reproductivity method is fruitful in the theory of functional equations, Boolean algebras and finite structures. His contributions are included into world famous monographs dealing with functional equations theory and Boolean algebras (M. Kuczma, S. Rudeanu). Another example is the method of solving a system of equations in real unknowns, known as M-m calculus. Prešić developed this theory at the end of the eighties and at the beginning of the nineties of the XX century. The method is applicable to a wide class of equation systems, including all equations of the algebraic type and many classes of transcendental equations. In principle, the solving procedure is based on exhaustion method and uses specific features of functions of bounded variation. The idea of the method consists in exhausting subsets of the domains which do not contain a solution, so that what is left over in the limit is the solutions of the system.

Professor Prešić also successfully worked in the theory of polynomials, the theory of quasigroups, universal algebras, the theory of fixed points and field of artificial intelligence. The results of his research were cited by leading authorities in various mathematical disciplines, such as P.M. Cohn in universal algebra, S. Rudeanu in Boolean algebra, and M. Kuczma in functional equations theory. In Serbia (and former Yugoslavia) a large number of mathematicians studied and developed Prešić's results in their research papers, books, MSc and PhD theses.

Professor Prešić also had other important activities in Serbian mathematics, particularly in mathematical logic. In the early sixties of the last century professor Prešić founded the Seminar of mathematical logic of the Mathematical Institute SASA. This is the oldest seminar of the Mathematical Institute and dozens of mathematicians from Serbia and the former Yugoslavia took part in its work. The students of professor Prešić or students of his students, are now respectable professors at well-known universities in the USA, Canada and France. At least 14 PhD theses and about 20 MSc theses were defended under professor Prešić's supervision.

Professor Prešić was also involved in various forms of social activities. He was the member of the Educational Council of the Republic of Serbia and the President of the Commission for mathematics in the period 1972-1976. Also, he was one of the main active participants in the development of modern mathematics curricula for primary and secondary schools. For years he worked in the Mathematical Institute: he was President of the Council, a member of the Scientific Council, a project leader in the fields of mathematical logic, algebra and artificial intelligence. Finally, for years he was a member of the editorial board of the leading Serbian mathematical journal Publications de l'Institut Mathématique.

Figure 1 Page of the Digital Legacy of professor Slaviša Prešić with his biography

Prešić was the recipient of notable Humboldt scholarship (1971). Besides Germany, in the period 1970-2000, he also visited the following institutions and gave speeches: the University of California at Berkeley, the Courant Institute in New York, New York University, Athens University and MGU in Moscow. Profesor Prešić published more than 50 scientific papers and about 20 books in mathematics or related to mathematics.Detailed information regarding the biography of the professor Prešić can be found in [4].

Implementation of the Digital Legacy of professor Slaviša Prešić

Digital Legacy of professor Slaviša Prešić is a website, which was developed using a free and open-source content management system WordPress [5]. WordPress was built on PHP programming language and MySQL database and it is the most popular and fastest growing content management systems [6]. The thousands of available plugins, widgets and themes for WordPress allow the simple and fast definition of the look and functionality of websites. The look of the Digital Legacy of professor Slaviša Prešić was defined using the theme Nirvana.

Content of the Digital Legacy of Professor Slaviša Prešić

Digital Legacy of professor Slaviša Prešić, beside the biography (Figure 1), contains material in various digital formats about the life and successful scientific work of the professor. Materials about the life of professor Prešić include audio and video recordings of commemorations held in 2008 and 2009 in honor of professor Prešić (Figure 2). Materials from the professor's scientific work include professional and scientific papers, books, audio and video recordings of the professor's lectures and public speeches.

There are 55 professional and scientific papers and 5 books of professor Prešić presented. Papers were published in the period 1960-2007 in five different languages in various journals. Some of the journals are: Bulletin de la Société des mathématiciens et physiciens de la R.S. de Serbie, C. R. Acad. Sc. Paris, Publications de l'Institut Mathématique, Nouvelle série, Publikacije Elektrotehničkog Fakulteta Univerziteta u Beogradu, Serija Matematika i Fizika, Intelektualni sistemi and Matematički Vesnik. Presented books were published in the period 1974-1997 in Serbian and English language. A list of presented books has been shown on Figure 3. Besides the books written by professor Prešić,the book *A tribute to S. B. Prešić: Papers celebrating his 65th birthday*, which contains papers about the life and work of professor Prešić from the perspective of his colleagues, was presented.

Various multimedia content is presented, 126 audio and 77 video recordings. Among them of particular importance are audio and video recordings of lectures of professor Prešić (Figure 4) which were recorded in September, October and November 2007 with the intention to be available to a wide audience (66 entries). There are also short audio recordings from the point of view of the student Zlatko Čavić, which are related to professor's lectures held on the course Introduction to Programming at the Faculty of Mathematics in Belgrade in 1995/1996 academic year, and to professor's public speeches. Other multimedia contents include audio recording of the program "On this day - 25.03" on Radio Belgrade and video recordings of seminars, lectures and summer school where professor Prešić participated (XIII Special seminar - Kolarac, Belgrade, 1997; XIII Archimedes Seminar in Mathematics and Computing - Kolarac, Belgrade; Summer Mathematical School in 2000; Lecture about Newton and Leibniz - Kolarac, Belgrade, 2002). Short video content from gathering on the occasion of the retirement of professor Prešić in June 2000, is also available.

Audio zapisi sa komemoracija i tribina

▶ 0:00 / 1:21 ●——— 🔊 —●— ⬇

2. septembar 2008.
1. deo

▶ 00:00 / 32:21 ●——— 🔊 —●— ⬇

2. septembar 2008.
2. deo

▶ 00:00 / 58:14 ●——— 🔊 —●— ⬇

20. oktobar 2008.

▶ 0:00 / 1:51 ●——— 🔊 —●— ⬇

30. januar 2009.
1. deo

▶ 0:00 / 3:02 ●——— 🔊 —●— ⬇

30. januar 2009.
2. deo

▶ 00:00 / 93:25 ●——— 🔊 —●— ⬇

30. januar 2009.
3. deo

Figure 2 Audio recordings of commemorations held in 2008 and 2009 in honor of professor Prešić which are presented at the website Digital Legacy of Professor Slaviša Prešić

Knjige

Elementi matematičke logike
Slaviša B. Prešić
Zavod za udžbenike i nastavna sredstva – Beograd, Beograd 1974. III izdanje

m-M Calculus
Slaviša B. Prešić
Matematički institut, Beograd 1997.

O matematičkoj logici, brojevima i geometriji u prvom razredu srednjih škola, priručnik za profesore
Dr Slaviša Prešić i dr Branka Alimpić
IGKRO „Svjetlost" OOUR Zavod za udžbenike, Sarajevo 1977.

Problem postojanja u matematici
S. Prešić, Z. Šikić, M. Prešić, Ž. Mijajlović, M. Mihaljinec, K. Šeper i dr.
Matematički vidici 3, Matematički institut, Beograd 1979.

Разнице, I
Славиша Б. Прешић
Мала математичка библиотека, Просветни преглед, Београд 1997.

Figure 3 Books of professor Prešić which are presented at the website Digital Legacy of Professor Slaviša Prešić

Figure 4Video recordings of lectures of professor Prešić made on 3 October 2007 which are presented at the website Digital Legacy of Professor Slaviša Prešić

The presented material has been collected by professor Mijajlović and family members of professor Prešić.

Conclusion

Professor Slaviša Prešić was a respected scientist and professor of the Faculty of Mathematics, who has left behind a rich legacy from different branches of mathematics. He greatly contributed to the modernization of mathematics at all levels of education. The Digital Legacy of professor Slaviša Prešić was made with the aim to present in one place the scientific work of professor and to make it available to a wider auditorium.

Acknowledgment

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