How LNCS Helped to Shape the Field of Business Process Management

Wil M.P. van der Aalst[1,2]

[1] Process and Data Science, RWTH Aachen University, Aachen, Germany
[2] Fraunhofer FIT, Sankt Augustin, Germany
wvdaalst@rwth-aachen.de
www.vdaalst.com

Abstract. Alfred Hofmann has been responsible for our Lecture Notes in Computer Science (LNCS) series for over 30 years. During these years the field of computer science changed dramatically. First of all, computer science has become much more important. This is reflected by the number of LNCS volumes per year growing from a handful per year to over 600 volumes per year. Second, computer science broadened its scope and now also includes topics such as data science and business process management. Alfred Hofmann dedicated his career to LNCS and helped to create a publication channel for both established and upcoming fields. For example, the Business Process Management (BPM) conference series was published in LNCS right from the start in 2003. To celebrate Alfred's contributions, I reflect on LNCS from a BPM perspective.

Keywords: Lecture Notes in Computer Science (LNCS), Business Process Management (BPM) conference series

1 Introduction

I'm happy to contribute to this "commemorative publication", celebrating Alfred Hofmann's contributions to the Lecture Notes in Computer Science (LNCS) series over the last 30 years. LNCS was established in 1973. In the first years there were only a dozen LNCS volumes per year. When Alfred took over, less than 100 were published per year and there were discussions to stop the LNCS series. Thanks to his efforts, LNCS expanded impressively. Alfred traveled around the world for almost 30 years to promote the LNCS series. In 2016, the milestone of 10.000 volumes was reached. Currently, there are over 12.000 LNCS volumes with around 600 being added each year. These include transactions subseries such as "Petri Nets and Other Models of Concurrency" (ToPNoC) and topical subseries such as "Lecture Notes in Artificial Intelligence" (LNAI) and Lecture Notes in Bioinformatics (LNBI). There are also "sister series" such as "Lecture Notes in Business Information Processing" (LNBIP), where I'm one of the editors.

I have organized many conferences and workshops published by Springer in LNCS (and also LNBIP). This always required the approval of Alfred. He would send an e-mail with the topic "Conference XYZ – LNCS: Okay!". Compared to

other publishers (e.g., IEEE) these processes were always smooth and handed in a professional manner. The conditions would always be crystal clear and what was promised also happened. This enables researchers to focus on the content.

In the remainder, I briefly reflect on the development of LNCS from a personal perspective. I will also sketch how the Business Process Management (BPM) conference series emerged from the Petri net conference series. The proceedings of both conference series appeared in LNCS over the last 40 years.

2 Petri Nets and LNCS

I have organized the Petri net conference twice (2003 in Eindhoven and 2019 in Aachen) and was two times program chair [2, 3, 7]. The conference in Aachen last year (June 2019), was the 40th conference. Renowned speakers reflected on the rich history of Petri net research.

In 1979, the Advanced Course on General Net Theory of Processes and Systems took place in Hamburg, resulting in the 84th LNCS volume published in 1980 [6]. Recall that LNCS was established in 1973. Hence, the volume number of [6] (i.e., 84) shows that in the beginning, there were just a handful of LNCS volumes per year. The success of the advanced course in 1979 was the trigger to create the "European Workshop on Application and Theory of Petri Nets" series, which started in Strasbourg in 1980. The series was first renamed to "International Conference on Applications and Theory of Petri Nets" and later to "International Conference on Application and Theory of Petri Nets and Concurrency". Initially, there were informal proceedings combined with periodic "Advances in Petri Nets". The LNCS numbers (following 84) are 188, 222, 254, 255, 266, 340, 424, 483, 524, 609, 616, 674, 691, 815, 935, 1091, 1248, 1420, 1639, 1825, 2075, 2360, 2679, 3099, 3536, 4024, 4546, 5062, 5606, 6128, 6709, 7347, 7927, 8498, 9115, 9698, 10258, 10877, and 11522. The larger distances between the volume numbers in the last 15 years show the success of Alfred Hofmann's efforts.

The focus of the Petri net conference is mostly on the theoretical aspects of concurrency theory and process models. However, computer science developed, leading to the uptake of topics such as machine learning, artificial intelligence, data science, process mining, service orientation, cloud computing, and business process management.

3 Business Process Management and LNCS

The first Business Process Management (BPM) conference took place in June 2003 in Eindhoven [5]. I initiated the BPM conference for several reasons. First of all, I wanted to have a co-located event complementing the Petri net conference, I was also organizing that year. Second, I felt that the topic of BPM deserved its own conference. Many BPM researchers were using Petri nets. However, their work did not fit well into the Petri net conference where there was little appreciation for more systems-oriented research (e.g., building workflow systems). The

BPM conference was an immediate success and all of its proceedings have been published in LNCS.

Before the BPM conference series started, I already edited an LNCS volume on Business Process Management (BPM) with Jörg Desel and Andreas Oberweis [4]. This helped to identify the key players in the field. According to SpringerLink there were around 80 BPM publications in 2000. In 2019 there were 1200 BPM publications showing the development of the field.

The workshop proceedings of the BPM conference are published in "Lecture Notes in Business Information Processing" (LNBIP), a series managed by Ralf Gerstner, a close colleague of Alfred. Ralf played a crucial role in strengthening the position of Springer as a key publisher for BPM research.

At the BPM conference in 2012, I gave a keynote reflecting on a decade of BPM conferences [1]. In the keynote, I presented a systematic analysis of the topics covered by the papers published in the BPM proceedings and identified 20 use cases and six key concerns: process modeling languages, process enactment infrastructures, process model analysis, process mining, process flexibility, and process reuse. I also predicted the uptake of more data-driven BPM approaches (such as process mining) that can be witnessed today.

4 Conclusion

Europe is still leading in both Petri nets and BPM. For example, there are fewer researchers in the USA working on "processes", and most innovations in BPM (e.g., novel process mining techniques) have European roots. Both traditional software providers such as SAP and Software AG and upcoming software providers such as Celonis and Signavio benefit from these roots. LNCS has a similar European flavor, thus nicely complementing IEEE and ACM.

I guess that I published over 200 papers in LNCS and another 100 in "sister series" such as LNBIP. My colleagues and me are grateful for the support given by Springer over the last 40 years. On behalf of the broader BPM community, I like to thank Alfred Hofmann for his efforts in building LNCS series!

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