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EDITORIAL

Editorial: 50th anniversary of Computing

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This year we celebrate the 50th birthday of the Computing journal of Springer. It is with great joy and a sense of achievement and pride that we like to celebrate this occasion with you, the readers of this journal. The content of the journal changed dramatically over the years and decades and mirrors the advancements in the field of Computer Science in academic research as well as in industry.

A major journal like Computing would not have survived 50 years without the loyalty of its readers, the interest of novel readers, the authors, and all involved editors and reviewers to whom I would like to express my gratitude. Furthermore, I like to thank the staff at Springer who dedicate a tremendous amount of time in working for each issue of this journal and I like to thank them for their passionate work.

For this 50th anniversary we have put together a special issue for this journal which addresses those research areas which are representing one cluster of an "hot area" of research in academic research as well as in industry today. Of course one special issue of a journal could never aim at summarizing concisely without the experience of world-leading scientific experts.

I am very happy to have attracted the following three papers for this special issue, which all offer a fresh look at various aspects of distributed systems.

In the first paper, van Steen and Tanenbaum, world-leading experts in distributed systems, provide a fresh look at distributed systems, which are commonplace, yet remain an often difficult area of research. This is partly explained by the many facets of such systems and the inherent difficulty to isolate these facets from each other. In

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this paper the authors provide a brief overview of distributed systems: what they are, their general design goals, and some of the most common types.

The second paper by Tsigkanos, Kehrer, and Ghezzi shows an avenue for research which can be characterized as rethinking the design of spatial environments, i.e., dynamic cyber-physical spaces, from a software engineering perspective. The authors outline their approach where formally analyzable models may be automatically extracted from BIM depending on the analysis required, and then checked against formally specified requirements, both regarding static and dynamic properties of the design, prior to the construction phase (at design-time). To realize automated operational management, these models can also be used during operation to continuously check satisfaction of the requirements when changes occur, and possibly enforce their satisfaction through self-adaptive strategies (at run-time).

The third paper by Georgakopoulos and Jayaraman provides an overview on the Internet of Things (IoT) and addresses Internet scale sensing for smart services. In this paper the authors present an overview of IoT solutions they have developed (which are referred to collectively as IoT platform) to address these technical challenges and help springboard IoT to its potential. The paper also describes a variety of IoT applications that have utilized the proposed IoT platform to provide smart IoT services in the areas of smart farming, smart grids, and smart manufacturing. Finally, the authors discuss future research and a vision of the next generation IoT infrastructure.

Once again, I like to thank all of you in making this journal a “living organism” for 50 years by providing fresh ideas and offering your services. I hope you enjoy reading this issue like I did.

Schahram Dustdar, Editor-in-Chief