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Volume 996

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Advanced Computing and Systems for Security

Volume Ten

Springer

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Preface

This volume contains the revised and improved version of papers presented at the 6th International Doctoral Symposium on Applied Computation and Security Systems (ACSS 2019) which took place in Kolkata, India, during 12–13 March 2019. The University of Calcutta in collaboration with Ca' Foscari University of Venice, Italy, and Bialystok University of Technology, Poland, organized the symposium. This symposium is unique in its characteristic of providing Ph.D. scholars with an opportunity to share the preliminary results of their work in an international context and be actively supported towards their first publication in a scientific volume.

On our pursuit of continuous excellence, we aim to include the emergent research domains in the scope of the symposium each year. This helps ACSS to stay in tune with the evolving research trends. The sixth year of the symposium was marked with a significant improvement in overall quality of papers, besides some very interesting papers in the domain of security and software engineering. We are grateful to the Programme Committee members for sharing their expertise and taking time off from their busy schedule to complete the review of the papers with utmost sincerity. The reviewers have pointed out the improvement areas for each paper they reviewed—and we believe that these suggestions would go a long way in improving the overall quality of research among the scholars. We have invited eminent researchers from academia and industry to chair the sessions which matched their research interests. As in previous years, the session chairs for each session had a prior go-through of each paper to be presented during the respective sessions. This is done to make it more interesting as we found deep involvement of the session chairs in mentoring the young scholars during their presentations.

The evolution of ACSS is an interesting process. We have noticed the emergence of security as a very important aspect of research, due to the overwhelming presence of IoT in every aspect of life.

The indexing initiatives from Springer have drawn a large number of high-quality submissions from scholars in India and abroad. ACSS continues with the tradition of double-blind review process by the PC members and by external reviewers. The reviewers mainly considered the technical aspect and novelty of

each paper, besides the validation of each work. This being a doctoral symposium, clarity of presentation was also given importance.

The Technical Program Committee for the symposium selected only 18 papers for publication out of 42 submissions.

We would like to take this opportunity to thank all the members of the Programme Committee and the external reviewers for their excellent and time-bound review works.

We thank the members of the Organizing Committee, whose sincere efforts before and during the symposium have resulted in a friendly and engaging event, where the discussions and suggestions during and after the paper presentations create a sense of community that is so important for supporting the growth of young researchers.

We thank Springer for sponsoring the best paper award. We would also like to thank ACM for the continuous support towards the success of the symposium. We appreciate the initiative and support from Mr. Aninda Bose and his colleagues in Springer Nature for their strong support towards publishing this post-symposium book in the series "Advances in Intelligent Systems and Computing". Last but not least, we thank all the authors without whom the symposium would not have reached up to this standard.

On behalf of the editorial team of ACSS 2019, we sincerely hope that ACSS 2019 and the works discussed in the symposium will be beneficial to all its readers and motivate them towards even better works.

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About the Editors

Rituparna Chaki is Professor of Information Technology in the University of Calcutta, India. She received her Ph.D. Degree from Jadavpur University in India in 2003. Before this she completed B.Tech. and M.Tech. in Computer Science & Engineering from the University of Calcutta in 1995 and 1997 respectively. She has served as a System Executive in the Ministry of Steel, Government of India for nine years, before joining the academics in 2005 as a Reader of Computer Science & Engineering in the West Bengal University of Technology, India. She is with the University of Calcutta since 2013. Her area of research includes Optical networks, Sensor networks, Mobile ad hoc networks, Internet of Things, Data Mining, etc. She has nearly 100 publications to her credit. Dr. Chaki has also served in the program committees of different international conferences. She has been a regular Visiting Professor in the AGH University of Science & Technology, Poland for the last few years. Dr. Chaki has co-authored a couple of books published by CRC Press, USA.

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Nabendu Chaki is a Professor in the Department of Computer Science & Engineering, University of Calcutta, Kolkata, India. Dr. Chaki did his first graduation in Physics from the legendary Presidency College in Kolkata and then in Computer Science & Engineering from the University of Calcutta. He has completed Ph.D. in 2000 from Jadavpur University, India. He is sharing 6 international patents including 4 U.S. patents with his students. Prof. Chaki has been quite active in developing international standards for Software Engineering and Cloud Computing as a member of Global Directory (GD) for ISO-IEC. Besides editing more than 25 book volumes, Nabendu has authored 6 text and research books and has more than 150 Scopus Indexed research papers in Journals and International conferences. His areas of research interests include distributed systems, image processing and software engineering. Dr. Chaki has served as a Research Faculty in the Ph.D. program in Software Engineering in U.S. Naval Postgraduate School, Monterey, CA. He is a visiting faculty member for many Universities in India and abroad. Besides being in the editorial board for several international journals, he has also served in the committees of over 50 international conferences. Prof. Chaki is the founder Chair of ACM Professional Chapter in Kolkata.