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Advanced Computing and Systems for Security

Volume Five

Springer

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Preface

The Fourth International Doctoral Symposium on Applied Computation and Security Systems (ACSS 2017) took place on March 17–19, 2017, in Patna, India.

University of Calcutta, along with Ca' Foscari University of Venice, Bialystok University of Technology, and Warsaw University of Technology collaborated to make ACSS 2017 a grand success. Around 40 participants from a multitude of institutions have taken part in a highly interactive discussion for 3 days, resulting in a cumulative experience of research idea exchange.

The post-conference book series are indexed by ISI Web of Sciences. The sincere effort of the program committee members coupled with ISI indexing has drawn a large number of high-quality submissions from scholars all over India and abroad. The Technical Program Committee for the symposium selected only 21 papers for publication out of 70 submissions.

The papers mainly covered the domains of computer vision and signal processing, biometrics-based authentication, security for Internet of Things, analysis and verification techniques, security in mobile and cloud scenarios, large-scale networking, remote health care, distributed systems, software engineering, cloud computing, privacy and confidentiality, access control, big data and data mining, android security.

The technical program was organized into six topical sessions each day. The sessions started with a keynote lecture on a pertinent research issue by an eminent researcher/scientist. This was followed by short, to-the-point presentations of the technical contributions. At the end of each session, the session chair handed over the suggestions for improvement pertaining to each paper. The sessions also saw lively discussions among the members of the audience and the presenters.

The post-conference book includes the presented papers in enhanced forms, based on the suggestions of the session chairs and the discussions following the presentations. Each of the accepted papers had undergone a double-blind review process. During the presentation, every presented paper was evaluated by the concerned session chair, an expert in the related domain. As a result of this process, most of the papers were thoroughly revised and improved, so much so that we feel

that this book has become much more than a mere post-workshop proceedings volume.

We would like to take this opportunity to thank all the members of the Technical Program Committee and the external reviewers for their excellent and time-bound review works. We thank all the sponsors who have come forward toward the organization of this symposium. These include Tata Consultancy Services (TCS), Springer India, ACM India. We appreciate the initiative and support from Mr. Aninda Bose and his colleagues in Springer for their strong support toward 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 2017, we sincerely hope that this book will be beneficial to all its readers and motivate them toward further research.

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Venice, Italy   Agostino Cortesi
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About the Editors

Rituparna Chaki is Professor of Information Technology at the University of Calcutta, India. She received her Ph.D. from Jadavpur University in India in 2003. Before this she completed her B.Tech. and M.Tech. in Computer Science and Engineering from University of Calcutta in 1995 and 1997, respectively. She has served as a System Executive in the Ministry of Steel, Government of India, for 9 years, before joining the academics in 2005 as a Reader of Computer Science and Engineering in the West Bengal University of Technology, India. She is with the University of Calcutta since 2013. Her areas of research include optical networks, sensor networks, mobile ad hoc networks, Internet of Things, data mining. She has nearly 100 publications to her credit. She has also served in the program committees of different international conferences. She has been a regular Visiting Professor in the AGH University of Science and Technology, Poland, for last few years. She has co-authored a couple of books published by CRC Press, USA.

Agostino Cortesi Ph.D. is a Full Professor of Computer Science at Ca' Foscari University, Venice, Italy. He served as Dean of the Computer Science Studies, as Department Chair, and as Vice-Rector for quality assessment and institutional affairs. His main research interests concern programming languages theory, software engineering, and static analysis techniques, with particular emphasis on security applications. He published more than 110 papers in high-level international journals and proceedings of international conferences. His h-index is 16 according to Scopus and 24 according to Google Scholar. He served several times as member (or chair) of program committees of international conferences (e.g., SAS, VMCAI, CSF, CISIM, ACM SAC), and he is in the editorial boards of the journals "Computer Languages, Systems and Structures" and "Journal of Universal Computer Science." Currently, he holds the chairs of "Software Engineering," "Program Analysis and Verification," "Computer Networks and Information Systems," and "Data Programming."

Khalid Saeed is a Full Professor in the Faculty of Computer Science, Bialystok University of Technology, Bialystok, Poland. He received B.Sc. in Electrical and Electronics Engineering in 1976 from Baghdad University in 1976 and M.Sc. and Ph.D. from Wroclaw University of Technology, Poland, in 1978 and 1981, respectively. He received his D.Sc. (Habilitation) in Computer Science from Polish Academy of Sciences in Warsaw in 2007. He was a Visiting Professor of Computer Science at Bialystok University of Technology, where he is now working as a full professor. He was with AGH University of Science and Technology in the years 2008–2014. He is also working as a Professor in the Faculty of Mathematics and Information Sciences at Warsaw University of Technology. His areas of interest are biometrics, image analysis and processing, and computer information systems. He has published more than 220 research papers, and edited 28 books, journals and conference proceedings, and authored 10 text and reference books. He supervised more than 130 M.Sc. and 16 Ph.D. theses. He gave more than 40 invited lectures and keynotes at different conferences and universities in Europe, China, India, South Korea, and Japan on biometrics, image analysis and processing. He received more than 20 academic awards. He is a member of more than 20 editorial boards of international journals and conferences. He is an IEEE Senior Member and has been selected as IEEE Distinguished Speaker for 2011–2016. He is the Editor-in-Chief of International Journal of Biometrics with Inderscience Publishers.

Nabendu Chaki is a Professor in the Department Computer Science and Engineering, University of Calcutta, Kolkata, India. He did his first graduation in Physics from the legendary Presidency College in Kolkata and then in Computer Science and Engineering from the University of Calcutta. He has completed his Ph. D. in 2000 from Jadavpur University, India. He is sharing six international patents including four US patents with his students. He 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, he 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. He has served as a Research Faculty in the Ph.D. program in Software Engineering in US 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. He is the founder Chair of ACM Professional Chapter in Kolkata.