## **Advances in Intelligent Systems and Computing**

### Volume 1136

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Rituparna Chaki · Agostino Cortesi · Khalid Saeed · Nabendu Chaki Editors

# Advanced Computing and Systems for Security

Volume Twelve



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## **Preface**

The seventh International Doctoral Symposium on Applied Computation and Security Systems (ACSS 2020) is held in Kolkata, India, during 28–29 February 2020. The University of Calcutta in collaboration with Ca' Foscari University of Venice, Italy, and Bialystok University of Technology, Poland, organized the symposium. This unique symposium is aimed specially to facilitate budding researchers in their pursuit of Ph.D., by providing a platform for the exchange of ideas.

Over the years, we have been continuously updating the list of significant research areas so as to include the most significant research domains in the scope of the symposium each year. This helps ACSS to stay in tune with the evolving research trends. The seventh year of the symposium showed a significant improvement in the overall quality of papers, besides some very interesting papers in the domain of security and image analysis. 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 points of improvement 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 results in interesting discussions during the sessions whereby the young researchers gather insightful advice for the improvement of their research work.

We have invited researchers working in the domains of computer vision and applications, biometrics-based authentication, security for Internet of things, analysis and verification techniques, security in heterogeneous networks, large-scale networking, remote healthcare distributed systems, signal processing, routing and security in WSN intelligent transportation system, human–computer interaction, bioinformatics and system biology computer forensics, privacy and confidentiality access control, big data and cloud computing data analytics, VLSI design and embedded systems requirements, engineering software security algorithms, natural

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language processing and quantum computing to submit their ongoing research works.

The indexing initiatives from Springer have drawn high-quality submissions from scholars in India and abroad. ACSS continues with the tradition of the 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 entire process of paper submission, review and acceptance process was done electronically. We thank the members of Programme Committee and Organizing Committee, whose sincere efforts before and during the symposium have resulted in a suite of strong technical paper presentations followed by effective discussions and suggestions for the improvement for each researcher.

The Technical Programme Committee for the symposium selected only 13 papers for publication out of 32 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 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 2020, we sincerely hope that ACSS 2020 and the works discussed in the symposium will be beneficial to all its readers and motivate them towards even better works.

Kolkata, India Venezia, Italy Bialystok, Poland Kolkata, India Rituparna Chaki Agostino Cortesi Khalid Saeed Nabendu Chaki

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