PROCEEDINGS OF SPIE

International Conference on Cryptography, Network Security, and Communication Technology (CNSCT 2023)

Zhengmin Kong
Nasir Saeed
Editors

6–8 January 2023
Changsha, China

Organized by
Wuhan University (China)

Sponsored by
Greater Noida Institute of Technology (India)
AEIC Academic Exchange Information Centre (China)

Published by
SPIE

Volume 12641

Proceedings of SPIE 0277-786X, V. 12641

International Conference on Cryptography, Network Security, and Communication Technology (CNSCT 2023), edited by Zhengmin Kong, Nasir Saeed, Proc. of SPIE Vol. 12641, 1264101
© 2023 SPIE · 0277-786X · doi: 10.1117/12.2682769

The papers in this volume were part of the technical conference cited on the cover and title page. Papers were selected and subject to review by the editors and conference program committee. Some conference presentations may not be available for publication. Additional papers and presentation recordings may be available online in the SPIE Digital Library at SPIEDigitalLibrary.org.

The papers reflect the work and thoughts of the authors and are published herein as submitted. The publisher is not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Please use the following format to cite material from these proceedings:
Author(s), "Title of Paper," in *International Conference on Cryptography, Network Security, and Communication Technology (CNSCT 2023)*, edited by Zhengmin Kong, Nasir Saeed, Proc. of SPIE 12641, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

ISSN: 0277-786X
ISSN: 1996-756X (electronic)

ISBN: 9781510664944
ISBN: 9781510664951 (electronic)

Published by
SPIE
P.O. Box 10, Bellingham, Washington 98227-0010 USA
Telephone +1 360 676 3290 (Pacific Time)
SPIE.org

Printed in the United States of America by Curran Associates, Inc., under license from SPIE.

Publication of record for individual papers is online in the SPIE Digital Library.

SPIE. DIGITAL LIBRARY
SPIEDigitalLibrary.org

Paper Numbering: A unique citation identifier (CID) number is assigned to each article in the Proceedings of SPIE at the time of publication. Utilization of CIDs allows articles to be fully citable as soon as they are published online, and connects the same identifier to all online and print versions of the publication. SPIE uses a seven-digit CID article numbering system structured as follows:

- The first five digits correspond to the SPIE volume number.
- The last two digits indicate publication order within the volume using a Base 36 numbering system employing both numerals and letters. These two-number sets start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B … 0Z, followed by 10-1Z, 20-2Z, etc. The CID Number appears on each page of the manuscript.

Contents

MOBILE COMMUNICATION AND DIGITAL SIGNAL PROCESSING

Conference Committee

Conference General Chair

Samir Ladaci, National Polytechnic School of Constantine (Algeria)

Technical Program Committee Chair

Sandeep Saxena, Greater Noida Institute of Technology (India)

Publication Chairs

Nasir Saeed, Northern Border University (Saudi Arabia)
Zhengmin Kong, Wuhan University (China)

Technical Program Committee

Qing Li, Anhui Agricultural University (China)
Omar Dib, Wenzhou-Kean University (China)
Dimitrios Kollias, University of Greenwich (United Kingdom)
Attlee M. Gamundani, Namibia University of Science and Technology (Namibia)
Prateek Srivastav, Chinese Academy of Sciences (China)
Rajesh S. Bansode, Thakur College of Engineering and Technology (India)
Azim Zaliha Abd Aziz, Universiti Sultan Zainal Abidin (Malaysia)