

PROCEEDINGS OF SPIE

Mobile Multimedia/Image Processing, Security, and Applications 2018

Sos S. Aghaian
Sabah A. Jassim
Stephen P. DelMarco
Vijayan K. Asari
Editors

16–17 April 2018
Orlando, Florida, United States

Sponsored and Published by
SPIE

Volume 10668

Proceedings of SPIE 0277-786X, V. 10668

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

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 *Mobile Multimedia/Image Processing, Security, and Applications 2018*, edited by Sos S. Aghaian, Sabah A. Jassim, Stephen P. DelMarco, Vijayan K. Asari, Proceedings of SPIE Vol. 10668 (SPIE, Bellingham, WA, 2018) Seven-digit Article CID Number.

ISSN: 0277-786X

ISSN: 1996-756X (electronic)

ISBN: 9781510618473

ISBN: 9781510618480 (electronic)

Published by

SPIE

P.O. Box 10, Bellingham, Washington 98227-0010 USA

Telephone +1 360 676 3290 (Pacific Time) Fax +1 360 647 1445

SPIE.org

Copyright © 2018, Society of Photo-Optical Instrumentation Engineers.

Copying of material in this book for internal or personal use, or for the internal or personal use of specific clients, beyond the fair use provisions granted by the U.S. Copyright Law is authorized by SPIE subject to payment of copying fees. The Transactional Reporting Service base fee for this volume is \$18.00 per article (or portion thereof), which should be paid directly to the Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, MA 01923. Payment may also be made electronically through CCC Online at copyright.com. Other copying for republication, resale, advertising or promotion, or any form of systematic or multiple reproduction of any material in this book is prohibited except with permission in writing from the publisher. The CCC fee code is 0277-786X/18/\$18.00.

Printed in the United States of America Vm7 i ffUb '5gg: WJUH' q' bWZi bXYf' JW bg' Zc'a 'GD-9.

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

SPIE. DIGITAL LIBRARY

SPIEDigitalLibrary.org

Paper Numbering: *Proceedings of SPIE* follow an e-First publication model. A unique citation identifier (CID) number is assigned to each article 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

v	<i>Authors</i>
vii	<i>Conference Committee</i>

SESSION 1 INNOVATIVE IMAGE PROCESSING TECHNIQUES

10668 02	Mathematical aspects of transit photometry for small UAV detection in video (Invited Paper) [10668-1]
10668 05	Topological data analysis to improve exemplar-based inpainting [10668-4]
10668 06	Colourizing monochrome images [10668-5]

SESSION 2 IMAGE ANALYSIS TECHNIQUES

10668 08	Multi-feature fusion based approach for robust face recognition [10668-6]
10668 09	Processing global and local features in convolutional neural network (CNN) and primate visual systems [10668-7]
10668 0A	Book title recognition for smart library with deep learning [10668-8]

SESSION 3 MULTIMEDIA ALGORITHMS AND SYSTEMS

10668 0D	Fixation oriented object segmentation using mobile eye tracker [10668-11]
10668 0G	Human detection in infrared imagery using intensity distribution, gradient and texture features [10668-14]

SESSION 4 IMAGE SECURITY, AUTHENTICATION AND DIGITAL FORENSICS

10668 0H	Hill climbing-based histogram equalization for camouflage object detection [10668-15]
10668 0I	Data-independent versus data-dependent dimension reduction for gait-based gender classification [10668-16]
10668 0J	Topological data analysis as image steganalysis technique [10668-17]

POSTER SESSION

- 10668 OL **No-reference color-depth quality measure: CDME** [10668-20]
- 10668 ON **Multi-view near-Infrared image mosaicking for face detection in smart cities** [10668-22]
- 10668 OQ **A novel image enhancement method of 3D medical images by transforming the 3D images to 2D grayscale images** [10668-25]
- 10668 OR **Re-coloring of grayscale images: models with aesthetic and golden proportions** [10668-26]
- 10668 OS **Face-It-Up: a scientific app for face processing using mobile devices and machine learning APIs** [10668-28]
- 10668 OV **Face description using anisotropic gradient: thermal infrared to visible face recognition** [10668-31]