PROCEEDINGS OF SPIE

SPIDigitalLibrary.org/conference-proceedings-of-spie

Front Matter: Volume 11550

, "Front Matter: Volume 11550," Proc. SPIE 11550, Optoelectronic Imaging and Multimedia Technology VII, 1155001 (3 November 2020); doi: 10.1117/12.2585944

SPIE.

Event: SPIE/COS Photonics Asia, 2020, Online Only

PROCEEDINGS OF SPIE

Optoelectronic Imaging and Multimedia Technology VII

Qionghai Dai
Tsutomu Shimura
Zhenrong Zheng
Editors

12–16 October 2020
Online Only, China

Sponsored by
SPIE
COS—Chinese Optical Society

Cooperating Organizations

Tsinghua University (China) • Peking University (China) • University of Science and Technology of China (China) • Zhejiang University (China) • Tianjin University (China) Beijing Institute of Technology (China) • Beijing University of Posts and Telecommunications (China) • Nankai University (China) • Changchun University of Science and Technology (China) • University of Shanghai for Science and Technology (China) • Capital Normal University (China) • Huazhong University of Science and Technology (China) • Beijing Jiaotong University (China) • China Jiliang University (China) • Shanghai Institute of Optics and Fine Mechanics, CAS (China) • Changchun Institute of Optics, Fine Mechanics and Physics, CAS (China) • Institute of Semiconductors, CAS (China) • Institute of Optics and Electronics, CAS (China) • Institute of Physics, CAS (China) • Shanghai Institute of Technical Physics, CAS (China) • China Instrument and Control Society (China) • Japan Optical Society (Japan) • Korea Optical Society (Korea, Republic of) • Australia Optical Society (Australia) • Singapore Optical Society (Singapore) • European Optical Society

Supporting Organizations

China Association for Science and Technology (CAST) (China)
Department of Information of National Nature Science Foundation, China
(NSFC) (China)

Published by
SPIE

Volume 11550

Proceedings of SPIE 0277-786X, V. 11550

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

Optoelectronic Imaging and Multimedia Technology VII, edited by Qionghai Dai
Tsutomu Shimura, Zhenrong Zheng, Proc. of SPIE Vol. 11550, 1155001
© 2020 SPIE · CCC code: 0277-786X/20/\$21 · doi: 10.1117/12.2585944

Proc. of SPIE Vol. 11550 1155001-1

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 *Optoelectronic Imaging and Multimedia Technology VII*, edited by Qionghai Dai, Tsutomu Shimura, Zhenrong Zheng, Proceedings of SPIE Vol. 11550 (SPIE, Bellingham, WA, 2020) Seven-digit Article CID Number.

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

ISBN: 9781510639157
ISBN: 9781510639164 (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 © 2020, 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 \$21.00 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/20/\$21.00.

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: *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

COMPUTATIONAL OPTICS

- 11550 02 **Optical backpropagation training method and its applications (Invited Paper)** [11550-1]
- 11550 04 **Image-free single-pixel sensing** [11550-3]
- 11550 05 **Aberration correction method for Fourier ptychographic microscopy based on neural network**
[11550-4]

MULTISPECTRAL IMAGING

- 11550 07 **Imaging through scattering media with wide spectral illumination** [11550-6]
- 11550 09 **Radiometric model of lunar based on GF-4 visible and near-infrared sensor** [11550-8]

LIGHT FIELD AND VR

- 11550 0B **A 3DOF+ view rendering method for panoramic light field** [11550-10]
- 11550 0C **Integral imaging display method based on holographic diffuser and discrete lens array**
[11550-11]

COMPUTER VISION: LOW

- 11550 0E **A comparative study of several template matching algorithms oriented to visual navigation**
[11550-14]
- 11550 0F **Calibration and image processing method for polarized skylight sensor** [11550-15]
- 11550 0G **Realistic image synthesis with hybrid photon maps** [11550-16]
- 11550 0H **Multi-scale WS-SSIM for panoramic video quality assessment** [11550-17]
- 11550 0I **EGA2N: enhanced gradient guiding network for single MR image super-resolution** [11550-18]

COMPUTER VISION: HIGH

- 11550 OJ **Multi-task attribute-fusion model for fine-grained image recognition (Invited Paper)** [11550-19]
- 11550 OK **A general framework for tactical exploitation of multi-source images** [11550-20]
- 11550 OL **Restoration of lighting sources for virtual reality systems using convolutional neural networks, computer vision algorithms, and disparity maps** [11550-21]
- 11550 OM **A bilateral-driven multi-centers clustering method for brain MRI segmentation (Invited Paper)** [11550-22]
- 11550 ON **PP-Net: simultaneous pose and shape reconstruction from a single depth map** [11550-23]
- 11550 OO **Select the model who knows the image best: a multi-model method** [11550-25]
- 11550 OP **Minimum fuzzy divergence based image cosegmentation** [11550-26]

POSTER SESSION

- 11550 OQ **A robust waste detection method based on cascade adversarial spatial dropout detection network** [11550-24]
- 11550 OT **Integral imaging based on sparse camera array and CNN super-resolution** [11550-29]
- 11550 OV **A happiness emotion detection method based on deep learning** [11550-31]
- 11550 OW **Smart algorithms enhance adaptive precision imaging** [11550-32]
- 11550 OX **Dual-level light field reconstruction network based on directional EPI volume** [11550-33]
- 11550 OY **Multi-temporal satellite remote sensing images registration in mountainous forestland based on robust PCA** [11550-34]
- 11550 IO **LED full parallax integrated imaging display system based on shielding plate and diffusion screen** [11550-36]
- 11550 II **Step response of an imaging system illuminated by partially polarized and partially coherent light** [11550-37]
- 11550 IJ **VQA-CPC: a novel visual quality assessment metric of color point clouds** [11550-38]
- 11550 IK **An accurate low-light object detection method based on pyramid networks** [11550-41]
- 11550 IL **Research on a line-expanded visual odometry in dynamic environment** [11550-43]

- 11550 18 **High resolution video inpainting based on spatial structure and temporal edge information**
[11550-44]
- 11550 19 **Colorimetric characterization of digital camera based on RBF neural network** [11550-45]
- 11550 1A **Panoramic video assessment based on cascaded network using saliency map** [11550-46]
- 11550 1B **Design of measurement and control system for dual incidence polarization high-speed Jones
matrix optical coherence tomography** [11550-47]
- 11550 1C **Wavefront sensorless adaptive optics control algorithm based on deep learning** [11550-48]