PROCEEDINGS OF SPIE

SPIDigitalLibrary.org/conference-proceedings-of-spie

Front Matter: Volume 11733

, "Front Matter: Volume 11733," Proc. SPIE 11733, Geospatial Informatics XI, 1173301 (4 May 2021); doi: 10.1117/12.2598610

SPIE.

Event: SPIE Defense + Commercial Sensing, 2021, Online Only

PROCEEDINGS OF SPIE

Geospatial Informatics XI

**Kannappan Palaniappan
Gunasekaran Seetharaman
Joshua D. Harguess**
Editors

**12–16 April 2021
Online Only, United States**

Sponsored and Published by
SPIE

Volume 11733

Proceedings of SPIE 0277-786X, V. 11733

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

Geospatial Informatics XI, edited by Kannappan Palaniappan, Gunasekaran Seetharaman,
Joshua D. Harguess, Proc. of SPIE Vol. 11733, 1173301 · © 2021 SPIE
CCC code: 0277-786X/21/\$21 · doi: 10.1117/12.2598610

Proc. of SPIE Vol. 11733 1173301-1

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 SPIDigitalLibrary.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 *Geospatial Informatics XI*, edited by Kannappan Palaniappan, Gunasekaran Seetharaman, Joshua D. Harguess, Proc. of SPIE 11733, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

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

ISBN: 9781510643031
ISBN: 9781510643048 (electronic)

Published by
SPIE
P.O. Box 10, Bellingham, Washington 98227-0010 USA
Telephone +1 360 676 3290 (Pacific Time)
SPIE.org
Copyright © 2021 Society of Photo-Optical Instrumentation Engineers (SPIE).

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 fees. To obtain permission to use and share articles in this volume, visit Copyright Clearance Center 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.

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
SPIDigitalLibrary.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

GEOSPATIAL INFORMATICS APPLICATIONS

- 11733 05 **Synthetic imagery for spatial resolution selection in maritime remote sensing** [11733-3]
- 11733 06 **Using deep perceptual embeddings as a quality metric for synthetic imagery** [11733-4]

GEOSPATIAL DATA MINING, ALGORITHMS, AND VISUALIZATION

- 11733 0A **Image translation to enhance IR2VIS image registration** [11733-8]
- 11733 0B **Semi-supervised exemplar learning for object detection in aerial imagery** [11733-9]
- 11733 0C **Targeted adversarial discriminative domain adaptation** [11733-10]

VIDEO ANALYTICS

- 11733 0D **Multi-modal dataset generation using domain randomization for object detection** [11733-11]
- 11733 0F **The vulnerability of UAVs: an adversarial machine learning perspective** [11733-13]
- 11733 0G **Automating situational reporting** [11733-14]

ENVIRONMENTAL AND DISASTER ANALYTICS

- 11733 0H **Water distribution network function and centrality** [11733-15]
- 11733 0I **Forest fire spread prediction using deep learning** [11733-16]
- 11733 0J **Critical node analysis (CNA) in power grids under enhanced restoration options** [11733-17]
- 11733 0M **Quantifying methane emissions in Delaware from field-based mid-IR sensors and satellite observations** [11733-20]

POSTER SESSION

- 11733 0N **Public health precautions for preventing malaria using environmental data** [11733-21]