

PROCEEDINGS OF SPIE

***International Conference on
Algorithms, Machine Learning,
and Image Processing
(AMLIP 2025)***

**Gordana Jovanovic Dolecek
Massimo Ficco**
Editors

**19–21 September 2025
Qingdao, China**

Organized by
Southwest University (China)

Sponsored by
AEIC—Academic Exchange Information Centre (China)

Published by
SPIE

Volume 14119

Proceedings of SPIE 0277-786X, V. 14119

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 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 *International Conference on Algorithms, Machine Learning, and Image Processing (AMLIP 2025)*, edited by Gordana Jovanovic Dolecek, Massimo Ficco, Proc. of SPIE 14119, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

ISSN: 0277-786X

ISSN: 1996-756X (electronic)

ISBN: 9798902321972

ISBN: 9798902321989 (electronic)

Published by

SPIE

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

Telephone +1 360 676 3290 (Pacific Time)

SPIE.org

Copyright © 2026 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

v *Conference Committee*

INTELLIGENT ALGORITHMS AND OPTIMIZATION

- 14119 02 **Multi-objective optimization design of ship longitudinal damper based on MOPSO algorithm** [14119-34]
- 14119 03 **Simulation study of power distribution system control methods for more electric aircraft** [14119-2]
- 14119 04 **Research on mudslide sensitive area identification method based on multi-source data** [14119-19]
- 14119 05 **Research and implementation of watermarking algorithm for copyright protection of HEVC-coded video** [14119-7]
- 14119 06 **A bidirectional LSTM-based approach for long-text named entity recognition** [14119-23]
- 14119 07 **Research on cable well survey technology based on L structure** [14119-20]
- 14119 08 **Optimizing decision thresholds and model selection for imbalanced clinical risk prediction: an ensemble framework for single-disease screening** [14119-30]
- 14119 09 **Technology for mining social network data based on natural language processing** [14119-35]
- 14119 0A **Numerical method for solving time inverse problem of reaction-diffusion equation using radial basis functions** [14119-14]
- 14119 0B **Multi-objective integer programming for urban relocation decision-making: a satisfaction-aware and cost-efficient optimization approach** [14119-17]
- 14119 0C **Optimized spectral regulation framework for circadian lighting: an enhanced genetic algorithm approach** [14119-16]

IMAGE PROCESSING AND COMPUTER VISION

- 14119 0D **Image feature extraction and reconstruction using principal component analysis algorithm in animation character design** [14119-37]
- 14119 0E **Research on colorectal cancer detection based on Raman spectroscopy and machine learning** [14119-15]

- 14119 OF **Aircraft PFD information recognition system based on YOLOv5** [14119-21]
- 14119 OG **Rapid recognition technology of composite insulator infrared thermal image based on semantic segmentation algorithm** [14119-5]
- 14119 OH **Application and challenges of image sensing technology in intelligent driving** [14119-12]
- 14119 OI **Fall detection using YOLO11n-pose and dilated convolution-based temporal modeling** [14119-4]
- 14119 OJ **Recognition and localization of maize seedlings based on computer vision** [14119-13]
- 14119 OK **A safety behavior monitoring method based on multi-view pose and gaze estimation** [14119-6]
- 14119 OL **FMFNet: frequency decomposition and multi-scale fusion network for low-light image enhancement** [14119-3]
- 14119 OM **Attention-enhanced RT-DETR-T for cervical cell detection** [14119-36]
- 14119 ON **Design and implementation of a deep learning-driven UAV ground recognition system** [14119-28]
- 14119 OO **Image restoration-guided low-light environment enhancement method** [14119-24]
- 14119 OP **Musical instrument classification method based on data augmentation and computer vision** [14119-32]