

PROCEEDINGS OF SPIE

International Conference on Intelligent Signal and Image Processing (ISIP 2026)

**Jianping Gou
Shiqian Wu**
Editors

**17–19 April 2026
Hefei, Anhui, China**

Organized by
Wuyi University (China)

Sponsored by
University of Salerno (Italy)
AEIC—Academic Exchange Information Centre (China)

Published by
SPIE

Volume 14293

Proceedings of SPIE 0277-786X, V. 14293

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 *International Conference on Intelligent Signal and Image Processing (ISIP 2026)*, edited by Jianping Gou, Shiqian Wu, Proc. of SPIE 14293, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

ISSN: 0277-786X

ISSN: 1996-756X (electronic)

ISBN: 9798902326809

ISBN: 9798902326816 (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**

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

vii *Conference Committee*

IMAGE PROCESSING AND COMPUTER VISION

- 14293 02 **Identification of changes in black and odorous water bodies after environmental protection treatment of rivers using remote sensing image segmentation** [14293-9]
- 14293 03 **Research on lightweight corn kernel defect detection and tracking method oriented towards industrial sorting** [14293-39]
- 14293 04 **Using agents to analyze computer vision literature: current status and development trends** [14293-29]
- 14293 05 **Neutron image noise removal method based on weighted nuclear norm minimization** [14293-3]
- 14293 06 **EF²Net: an enhanced feature fusion network for lightweight surface defect segmentation** [14293-1]
- 14293 07 **A super-resolution and foundation model adaptation framework for multilabel coral condition recognition** [14293-33]
- 14293 08 **A physics-guided transformer framework for remote sensing cloud removal** [14293-2]
- 14293 09 **Infrared image segmentation of electrical equipment based on transformer** [14293-21]
- 14293 0A **A lightweight self-supervised framework for monocular depth estimation in endoscopic scenes** [14293-5]
- 14293 0B **An edge-enhanced foreign object detection approach for transmission lines in complex environments** [14293-4]
- 14293 0C **Deepfake tampering detection based on multimodal large model** [14293-37]
- 14293 0D **Difference-feature-enhancement-oriented visible and infrared color fusion algorithm** [14293-15]
- 14293 0E **Improvement of bilateral filtering algorithm for tool detection** [14293-28]
- 14293 0F **A detection method for distorted paper invoices information** [14293-27]

- 14293 OG **A method for extracting faint targets from space remote sensing star images** [14293-25]
- 14293 OH **An LS-SPCNN method for Dunhuang mural image enhancement** [14293-6]
- 14293 OI **CS-SPCNN: cross-shaped simplified pulse-coupled neural network for medical image segmentation** [14293-24]
- 14293 OJ **An NS-SPCNN segmentation method for medical images** [14293-14]
- 14293 OK **IAV-SPCNN: an internal activity-variable simplified pulse-coupled neural network for medical image segmentation** [14293-8]
- 14293 OL **IAA-SPCNN: a robust image segmentation network based on adaptive dynamic threshold** [14293-19]

SIGNAL PROCESSING AND PATTERN RECOGNITION

- 14293 OM **A variational modal decomposition parameter optimization method for bearing fault signal feature extraction** [14293-31]
- 14293 ON **Research on intelligent supervision of ecological restoration in abandoned mines based on multisource data** [14293-22]
- 14293 OO **Energy-guided diffusion for socially plausible multi-agent trajectory prediction** [14293-30]
- 14293 OP **JDAAFNet: joint distribution alignment and attention fusion network for cross-subject multimodal EEG emotion recognition** [14293-35]
- 14293 OQ **A time-frequency joint spectral whitening preprocessing technique for acoustic imaging of vessel targets** [14293-36]
- 14293 OR **High-resolution flood monitoring based on CYGNSS surface reflectivity: a case study of Sofala Province, Mozambique** [14293-10]
- 14293 OS **An integrated desktop workflow for interactive delay correction in large shot-based seismic datasets** [14293-17]
- 14293 OT **Telecom operator anomaly detection model based on XGBoost and DNN** [14293-20]
- 14293 OU **Cognitive radar compound anti-jamming strategy generation via Monte Carlo tree search and physics-informed evaluation** [14293-13]
- 14293 OV **Research on radar target tracking algorithms for UAV swarms based on multimodel filtering** [14293-38]
- 14293 OW **Study on performance comparison of common radiotherapy dosimeters based on optical and computer technologies** [14293-23]

- 14293 0X **Efficient traffic flow prediction via bio-inspired reservoir computing with coupled neural dynamics** [14293-7]
- 14293 0Y **Research on crop growth prediction based on multisource data fusion using the PS-CCNN model** [14293-16]
- 14293 0Z **A transformer-based speech screening framework for depression using autoencoder-driven data augmentation** [14293-18]