2025 7th Asia Symposium on Image Processing (ASIP 2025)

Tsukuba, Japan
13-15 June 2025

IEEE Catalog Number: CFP25FZ6-POD
ISBN: 979-8-3315-1231-6

Copyright © 2025 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number: CFP25FZ6-POD
ISBN (Print-On-Demand): 979-8-3315-1231-6
ISBN (Online): 979-8-3315-1230-9

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

2025 7th Asia Symposium on Image Processing (ASIP)

ASIP 2025

Table of Contents

Preface ..... **ix**
Organizing Committee ..... **x**
Sponsors ..... **xiii**

Session 1 Image Detection Model and Optimization Calculation

YOLO-Based Hip Fracture Detection with Hyperparameter Tuning 1
Praechompoo Nilbanjong (Khon Kaen University, Thailand), Prin Twinprai (Khon Kaen University, Thailand), Nattaphon Twinprai (Khon Kaen University, Thailand), Patinya Muangkammuen (Khon Kaen University, Thailand), and Puripong Suthisopapan (Khon Kaen University, Thailand)

3D Object Detection for Near-Field Applications 6
Shuta Doura (Nagoya Institute of Technology, Japan) and Tomio Goto (Nagoya Institute of Technology, Japan)

Transfer Learning with Linear Channel Adaptation for Parkinson's Disease Detection in T1-MRI 10
Rui Yan (Hebei University of Science and Technology,China) and Saimei Guo (Hebei University of Science and Technology,China)

Object Detection for Grain-Leveling Robots in Complex Granary Environments 15
Chi Zhang (Tianjin University of Technology and Education, China), Bin Yang (Tianjin University of Technology and Education, China), Xiaoguang Zhou (Beijing University of Posts and Telecommunications, China), and Xiaosong Zhu (Tianjin University of Technology and Education, China)

Fully Automated Femoral Neck-Shaft Angle Measurement Based on Keypoint Detection 21
Thanachai Jantana (Khon Kaen University, Thailand), Nattaphon Twinprai (Khon Kaen University, Thailand), Prin Twinprai (Khon Kaen University, Thailand), Patinya Muangkammuen (Khon Kaen University, Thailand), and Puripong Suthisopapan (Khon Kaen University, Thailand)

Session 2 Image Classification and Algorithm

Using YOLOv9 to Classify the Freshness of Loligo Duvauceli 26
Joaquin S. Santos.II (Mapúa University, Philippines), Miguel Angel A. Rioveros (Mapúa University, Philippines), and Carlos C. Hortinela.IV (Mapúa University, Philippines)

Retinal Fundus Image Enhancement for CNN-Based Multiclass Eye Disease Classification 32
Alvin Choo (Universiti Malaysia Sarawak, Malaysia), Stephanie Chua (Universiti Malaysia Sarawak, Malaysia), Lik Thai Lim (Universiti Malaysia Sarawak, Malaysia), Dayang Nurfatimah Awang Iskandar (Universiti Malaysia Sarawak, Malaysia), Mohd Hanafi Ahmad Hijazi (Universiti Malaysia Sabah, Malaysia), and Puteri Nor Ellyza Nohuddin (Higher Colleges of Technology, United Arab Emirates)

Growth Habit Classification of Bamboo using YOLOv5 Algorithm 38
Carla C. Ty (Mapua University, Philippines), Dustin Jeiondre A. Ventura (Mapua University, Philippines), and Noel B. Linsangan (Mapua University, Philippines)

Facial Shape Image-Based Stunting Classification using CNN with Sliced Feature Extraction 43
Hanum Khairana Fatmah (Universitas Gadjah Mada, Indonesia), Aufaclav Zatu Kusuma Frisky (Universitas Gadjah Mada, Indonesia), and Mardhani Riasetiawan (Universitas Gadjah Mada, Indonesia)

Philippine License Plate Classification using K-Nearest Neighbors 48
Robne Kyle L. Fonseca (Mapúa University, Philippines), Neil Ade D. Martinez (Mapúa University, Philippines), and Rosemarie V. Pellegrino (Mapúa University, Philippines)

PDM-Based Graph Cut Clustering Method for Streamline Visualization 54
Zhen Wang (Tianjin University of Finance and Economics, China), Chenpeng Zhao (Yanshan University, China), Xionghao Zhao (Tianjin University of Finance and Economics, China), Xiaoxue Li (Tianjin University of Finance and Economics, China), and Zhan Wang (Tianjin University of Finance and Economics, China)

Session 3 Image Recognition and Application

Hanunoo Character Identification using Visual Saliency Models 62
John Carlo P. Galicia (Mapua University, Philippines), Mark Wilbur A. Cordero (Mapua University, Philippines), and Jocelyn F. Villaverde (Mapua University, Philippines)

Accuracy Improvement for License Plate Character Recognition using Learning Method 68
Yuki Esumi (Nagoya Institute of Technology, Japan) and Tomio Goto (Nagoya Institute of Technology, Japan)

End-to-End Multi-Domain Joint Learning for Robust Person Re-Identification in Large-Scale Surveillance 73
Yuan-Kai Wang (Fu Jen Catholic University, Taiwan), Tung-Ming Pan (Fu Jen Catholic University, Taiwan), Tian-You Chen (Fu Jen Catholic University, Taiwan), and Yan-Lok Sing (Fu Jen Catholic University, Taiwan)

Session 4 Intelligent Image Analysis and Computer Vision

Deep Learning for Tear Meniscus Analysis: A YOLOv8 Approach to Dry Eye Disease Diagnosis 78
Anandan R (Vellore Institute of Technology Chennai, India), Bala Murugan MS (Vellore Institute of Technology, Chennai, India), and Yoshiro Okazaki (Waseda University, Japan)

Investigation of Super-Resolution Technology Based on Image Alignment 82
Zhang Jiawei (Nagoya Institute of Technology, Japan) and Tomio Goto (Nagoya Institute of Technology, Japan)

Enhancing Boosting-Guided Image Captioning with Scene-Graph-Based Vision Transformer Integrated with GAN 87
Yizhen Wang (Shandong Vocational College of Science and Technology, China)

Multi-Frame Fusion-Based Ground Target Localization for Unmanned Aerial Vehicles 94
Shiyi Xiong (Nanjing University of Aeronautics and Astronautics, China), Yali Xue (Nanjing University of Aeronautics and Astronautics, China), and Liangchen Xie (ByteDance, China)

Self-Attention Guided Low-Light Image Enhancement GAN with Adaptive Multi-Objective Loss Optimization 100
Ruofan Jia (University of Electronic Science and Technology of China, China), Xiaofeng Li (University of Electronic Science and Technology of China, China), Likun Wu (University of Electronic Science and Technology of China, China), and Minhang Zhang (University of Electronic Science and Technology of China, China)

Image-Based Data Acquisition System for Wireless Sensor Networks using Python 105
Wang Yucheng (Wenzhou Semir United International School, China) and Zhang Xiaohua (Wenzhou Business College, China)

TAE-Net: Top-k Attention Enhancement Network for Single Image Dehazing 110
Hongyuan Jing (Beijing Key Laboratory of Information Service Engineering Beijing Union University, China), Yi Ren (Beijing Union University, China), Mengfei Han (Beijing Union University, China), Wenlu Yang (Beijing Union University, China), Jinjin Hu (Beijing Union University, China), and Mengmeng Zhang (Beijing Key Laboratory of Information Service Engineering Beijing Union University, China)

Session 5 Application of AI Technology in Digital Image Processing

Enhanced q-Logarithm Based Image Watermarking using Fuzzy Image Filter 117
Piyanart Chotikawanid (Prince of Songkla University, Surat Thani Campus, Thailand) and Thumrongrat Amornraksa (King Mongkut's University of Technology Thonburi, Thailand)

Optimizing Source Recovery for fMRI by Integrating Biological and Mathematical Priors with Data-Driven Learning 122
Muhammad Usman Khalid (IMAM University (IMSIU), Saudi Arabia), Malik Muhammad Nauman (Universiti Brunei Darussalam, Brunei), Hatoon S. AlSagri (IMAM University (IMSIU), Saudi Arabia), Muhammad Abid (Universiti Brunei Darussalam, Brunei), Shafiq ur Rehman (IMAM University (IMSIU), Saudi Arabia), and Kamran Ali (Universiti Brunei Darussalam, Brunei)

Extending Heritage Tourism Beyond Reality with Extended Reality Technologies: A Systematic Literature Review 129
Abby Lian Hendrick (Universiti Malaysia Sarawak, Malaysia), Suriati Khartini Jali (Universiti Malaysia Sarawak, Malaysia), Mohamad Imran Bandan (Universiti Malaysia Sarawak, Malaysia), Phei Chin Lim (Universiti Malaysia Sarawak, Malaysia), Yin Chai Wang (Universiti Malaysia Sarawak, Malaysia), Ally Dian Hendrick (Universiti Malaysia Sarawak, Malaysia), Nurul Farizah Ridzuan (Universiti Malaysia Sarawak, Malaysia), Johannes Hamonangan Siregar (Universitas Pembangunan Jaya, Indonesia), and Rufman Iman Akbar (Universitas Pembangunan Jaya, Indonesia)

Metal Artifact Removal in CT Images Based on U-Net Network with Fusion Attention Mechanism 135
Jian Dong (Tianjin University of Technology and Education, China), Qiyu Wang (Tianjin University of Technology and Education, China), Minting Wu (Tianjin University of Technology and Education, China), and Jintao Zhao (Tianjin University of Technology and Education, China)

Research on Visualization Design of Ecological Environment Image Processing Empowered by AIGC Based on Optimization of LSTM-CNN Model 143
LI YuanCheng (Guangxi Vocational Normal University, China)

An Investigation on Graph Convolution Networks for Color Enhancements of V-PCC 148
Zeliang Li (Hong Kong Metropolitan University, Hong Kong), Yu Liu (University of Electronic Science and Technology of China, China), Siu-Kei Au Yeung (Hong Kong Metropolitan University, Hong Kong), Shuyuan Zhu (University of Electronic Science and Technology of China, China), and Kevin Hung (Hong Kong Metropolitan University, Hong Kong)

Gamified eXtended Reality Potential for Kenyah and Kayan Traditional Medicine Knowledge Transfer and Preservation 153
Ally Dian Hendrick (Universiti Malaysia Sarawak, Malaysia), Suriati Khartini Jali (Universiti Malaysia Sarawak, Malaysia), Nurul Farizah Ridzuan (Universiti Malaysia Sarawak, Malaysia), Jane Labadin (Universiti Malaysia Sarawak, Malaysia), Abby Lian Hendrick (Universiti Malaysia Sarawak, Malaysia), and Juna Liau (Universiti Malaysia Sarawak, Malaysia)

Scalable AI Pipeline for Specified Colour Transfer from Concept Sketches into Static Animation Frames 159
Bo-Wei Chen (National Central University, Taiwan), Yi-Chun Yeh (National Central University, Taiwan), Shih-Yen Wu (National Central University, Taiwan), Ching-Ying Yu (National Central University, Taiwan), Long-Xuan Huang (National Central University, Taiwan), Hsiao-Chu Chiou (National Central University, Taiwan), and Yi-Ming Chen (National Central University, Taiwan)

Computer Art AIGC-Driven Design Path Exploration for Guangxi Ethnic Cultural Virtual Idol Images 165
LI YuanCheng (Guangxi Vocational Normal University, China)

Author Index **171**