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Soggetti	Computer vision Artificial intelligence Pattern recognition systems Computer engineering Computer networks Computer Vision Artificial Intelligence Automated Pattern Recognition Computer Engineering and Networks
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Nota di contenuto	Part 1 Artificial Intelligence: -- SRG-Net: Semantic Relation-Guided Network for Commonsense Video Captioning. -- EANet: Edge-Aware Attention Network for Real-Time Road Scene Understanding. -- Learning A Decomposition-Driven Two Stages Unfolding Artifact Removal Network for Compressed Images. -- Martingale-Based Skin Lesion Segmentation from Dermoscopic Images. -- Research on Adaptive Multi-layer Multi-pass Welding Technology for Medium-Thick Plates. -- M <sup>3</sup> E: Mixture of Multi-scale Multi-modal Experts for Time Series Forecasting. -- PoseCLR Bridging 2D and 3D Pose Representations via Contrastive Learning for Action Recognition. -- Art3D-Fusion: A Hybrid Framework for Visual Synthesis with Artistic

Control. -- Lesion Localization Prior-Driven Few-Shot Learning for Branch Atheromatous Disease Diagnosis. -- Deep Multi-Sentence Aligned Cross-Modal Retrieval. -- Single-Layer Denoising Taylorformer for UAV Nighttime Tracking. -- Position-Aware Text-to-Image Generation with Efficient Controllability. -- Introducing DINOv2 for Medical Image Boundary Tracking. -- Adaptive Pruning and Cross-Domain Feature Fusion for Robust Object Tracking. -- Data Leakage Detection in Large Vision-Language Models via Multimodal Perturbation. -- A Novel Dual-Branch Cross-Attention Transformer Network for Low-Dose CT Denoising. -- TCGFNet: Multi-Scale Transformer-Convolution with Geometry-Guided Feedback for Robust Point Cloud Denoising. -- Adversarial Iterative Pre-Enactment Framework for Air Combat Based on Mental Simulation Theory. -- SA-Pillar: Structure-Aware Feature Learning for Real-Time 3D Object Detection. -- Knowledge-aware Intent Subgraph Learning for Recommendation. -- PF-DETR: Enhanced DETR with Pre-Encoded Feature Fusion for Small and Multi-Scale Object Detection in UAV Imagery. -- Selective Labeling for 3D Shape Label Transfer based on Local-Global Features. -- Part 2 Biological and Medical Image Processing: -- MAA-Net: A Multi-Attention Aggregation Network for Segmentation of Key Structures in Microvascular Decompression. -- Contrastive Hierarchical Graph based Multiple Instance Learning for Fundus Screening -- Polyp Segmentation based on Edge Guidance. -- A Deep Unfolding based on U-Net Graph-Guided Hybrid Regularization method for Bioluminescence Tomography. -- CMambaR: Cardiac Phase Embedded Vision Mamba for Accelerating Cardiac MRI Reconstruction. -- SC-DSE-nnUNet: An Efficient Hippocampus MRI Segmentation Method. -- Spatiotemporal Feature Fusion for Glioblastoma Recurrence Prediction Using Mamba-Based Dual-Stream Framework. -- Automatic and Fast Segmentation of Cochlear Implant-Induced Artifacts in MR Images Using Deep Learning. -- Part 3 Color and Multispectral Processing: -- End-to-End Diffusion Models with Physics Priors for Enhanced Spectral Super-Resolution. -- Asymmetric Dual-Teacher Guided Knowledge Distillation for HSI-SR with Reconstructed Features. -- Gradient-based multi-focus image fusion with focus-aware saliency enhancement. -- OME-Net: Optimization-inspired Multi-domain Enhanced Network for Image Compressed Sensing Reconstruction. -- Part 4 Compression, Transmission, Retrieval: -- MARSNet: Scalable Deep Coding of LiDAR Point Clouds via Multimodal and Residual Learning. -- Accelerating Learned Video Compression via Low-Resolution Representation Learning. -- Optical Flow-driven Fast CU Partition for Inter Prediction in Versatile Video Coding. -- Semantic Maintained Video Compression by Background Blurring in Surveillance Scenarios. -- Learning Based Fast Coding Unit Decision for Video-based Point Cloud Compression. -- Part 5 Computational Imaging: -- Leveraging a Dual-Learning Methodology Based on Degradation Modeling and Fractional Fourier Image Transformer for Light Field Image Super-Resolution. -- Video Stabilization Based on MeshFlow Motion Model in Dynamic and Complex Scenes. Dual-Edge Consistency Constrained Unfolding Network for Depth Map Super-Resolution. -- Part 6 Computer Graphics and Visualization: -- Isotropic Remeshing with Inter-Angle Optimization. -- AlignMR: Design of a Home Yoga Self Learning System Based on MR Technology. -- Bi-IRNet: A Transformer-based Binaural Impulse Response Generation Guidance Model.

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#### Sommario/riassunto

The three-volume set constitutes the proceedings of the 13th International Conference on Image and Graphics, ICIG 2025, held in Xuzhou, China, during October 31–November 2, 2025. The 138 full

papers presented in this book were carefully selected and reviewed from 420 submissions. These papers have been organized in the following topical sections: Artificial intelligence, Machine learning, Computer vision, pattern Recognition, Rendering, Image manipulation, Graphics systems and interfaces, Image compression, Shape modeling, Biometrics, Scene understanding, Vision for robotics, Scene anomaly detection, Activity recognition and understanding, Feature selection. .

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