

Special Section

Trustworthy and Lightweight AI for Visual Intelligence and Health Applications

Eds.: Palanichamy Naveen

Aims and Scope

The growing demand for intelligent visual systems—especially in the domains of healthcare, security, and real-time embedded environments—requires Artificial Intelligence (AI) models that are lightweight, trustworthy, and ethically grounded. With the advent of transformer-based models, generative adversarial networks (GANs), and mobile-based AI solutions, research is moving rapidly towards developing AI architectures that balance efficiency, explainability, and performance.

This special issue aims to consolidate cutting-edge research in lightweight, ethical, and secure AI models applied to domains such as medical imaging, text understanding, underwater and aerial imaging, and digital forensics. Contributions addressing real-world implementations, interpretability, social impacts of AI systems, and cross-disciplinary applications are especially welcome.

Important Dates

25 January 2026

Paper Submission Deadline

30 April 2026

Notification of the first-round review

25 July 2026

Revised papers submission

15 September 2026

Final Acceptance

Guest Editor

Dr. Palanichamy Naveen

Dr. N.G.P. Institute of Technology, Coimbatore,
India

naveenamp88@gmail.com

Special Section

Trustworthy and Lightweight AI for Visual Intelligence and Health Applications

Eds.: Palanichamy Naveen

Topics of Interest

Papers are welcomed on the following topics but not limited to:

1. Lightweight and Transformer-Based Models
 - Efficient transformer architectures for mobile or edge devices
 - Quantization, pruning, and compression strategies for vision transformers
 - Vision transformers in retinal/OCT and biomedical imaging
2. AI for Medical Image Analysis
 - Deep learning for ophthalmic diagnosis and retinal layer segmentation
 - Federated and privacy-aware AI in medical imaging
 - Disease detection models for deployment in low-resource settings
3. Scene Understanding and Text Detection
 - GAN-based pipelines for end-to-end text recognition
 - Multimodal learning for document and natural scene analysis
4. Image Security and Steganography
 - Secure steganographic schemes using optimization techniques
 - Lightweight encryption and data hiding for multi-image scenarios
5. Ethical and Societal Aspects of AI
 - Algorithmic personification, trust, and explainability in AI systems
 - Human-in-the-loop and responsible AI governance models
6. Underwater and Aerial Imaging Intelligence
 - Deep learning for turbid image enhancement
 - AI for remote sensing, marine surveillance, and environmental monitoring
7. Multimodal and Mobile AI Systems
 - On-device intelligence for health monitoring and disease detection
 - Mobile-friendly architecture design for AI-driven visual tasks