SAGIVTECH IMVC 2026
15th Israel Machine Vision Conference (IMVC) 2026
Monday | April 27, 2026 | Pavilion 10, EXPO Tel Aviv

RealEyes: Hybrid Deepfake Image Detection Using Multi-method Analysis

Gal Tayeb, Shamoon College of Engineering

The rapid advancement of generative AI technologies, particularly GANs and diffusion models, has enabled the creation of highly realistic synthetic images that are increasingly difficult for humans to distinguish from authentic content. This project presents RealEyes, a hybrid detection system for identifying deepfake images.

The system integrates multiple complementary analysis methods, including convolutional trace extraction via the EM algorithm, SRM spatial richness filters, advanced CNN architectures (ResNet, EfficientNet, DenseNet, Vision Transformers), and classical machine learning classifiers such as Random Forest, XGBoost, and SVM. An ensemble approach combines these methods to improve generalization across unseen generative models.

The system also includes a user-friendly interface enabling real-time image authentication. Evaluation is performed on diverse datasets, including out-of-training-distribution samples, using precision, recall, and F1-score metrics.