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Stellingen

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Leveraging image noise: Source camera identification and increased robustness of convolutional neural networks

van

Guru Swaroop Bennabhaktula

1. Image noise can make or break a system and needs to be tackled accordingly based on the application.
2. Source camera device identification is still a hard problem in digital image forensics. It needs investigation beyond traditional explainable methods.
3. Homogeneous regions in an image contain the least distorted camera forensic traces.
4. Constrained convolutions for scene suppression are useful only with shallow Convolutional Neural Networks (ConvNets).
5. Extracting forensic traces from images and video frames requires different strategies. Improvements in one do not translate to the other.
6. More strategies are needed to complement data augmentation to improve ConvNet robustness to out-of-distribution evaluation data.
7. Filtering out unwanted details from an input image is necessary for improved robustness of ConvNets.
8. No matter how advanced AI may get, in the end, it is merely a sophisticated piece of art without a heart.
9. "The end of education is character", by Sri Sathya Sai.