Digital Watermarking for Copyright Owners

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Group 4

1 Objective

As digital information may be copied and attacked during storage and transmission, our main goal is to create a tool that allows copyright owners to sign and protect their artwork using digital watermarking methods.

Using these techniques, we should be able to protect against artwork tampering and edition (blurring, noise, lossy compression, etc.) and identify the owner of a copyrighted artwork.

The solution is to implement a set of algorithms that allows to reach the goals defined above.

2 Checkpoint

For the checkpoint, our goal is:

- implement a framework so that adding new algorithms is an easy task;
- Cox algorithm;
- Discrete Wavelet Transform based algorithm.

For the final delivery, we expect:

- everything proposed in the checkpoint;
- algorithm capable of image recovery.

3 Evaluation

Using a set of images with different resolutions (low, medium, high) the evaluation process is:

1. apply digital watermarks with every algorithm we have implemented;
2. simulate the attacks: resampling, JPEG compression, rotation, noise, cropping, low and high pass filters, blur;
3. extract the watermarks from the tampered artwork;
4. compare the watermarks;
5. recover the original image (if the algorithm supports it).

4 Future work

Create a graphical user interface for the tool, open source the code base and continue to add new algorithms and benchmarks.