Gici Gcomp manual
(version 2.0)

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http://www.gici.uab.es - http://gici.uab.cat/GiciWebPage/downloads.php

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1 Description

This software is an implementation of common metrics for 2D images and 3D images. The following metrics are included:

MAE Mean Absolute Error.

PAE Peak Absolute Error.

MSE Mean Squared Error or P-MSE if mask and weights values are defined.

RMSE Root Mean Squared Error.

ME Mean Error.

SNR Signal to Noise Ratio.

PSNR Peak Signal to Noise Ratio.

PSNR-S Peak Signal to Noise Ratio computed as in Salomon's book.

SNRVAR Signal to Noise Ratio calculated with the original image Variance.

EQUALITY Perfect equality (true/false).

A definition of them can be found in [1].

2 Requirements

This software is programmed in Java, so you might need a JAVA Runtime Environment(JRE) to run this application. We have used SUN JAVA 1.5.

JAI The Java Advanced Imaging (JAI) library is used to load and save images in formats other than raw or pgm. The JAI library can be freely downloaded from *http://java.sun.com*. **Note:** You don't need to have this library installed in order to compile the source code.

3 Usage

The application is provided in a single file, a jar file (*dist/Gcomp.jar*), that contains the application. Along with the application, the source code is also provided. If you need to rebuild the jar file, you can use the `ant` command.

To launch the application you can use the following command:

```
$ java -Xmx1200m -jar dist/Gcomp.jar --help
```

In a GNU/Linux environment you can also use the shell script `Gcomp` situated at the root of the Gcomp directory.

```
$ ./Gcomp --help
```

Two examples of usage are provided below:

- Compare two 3D images using all the metrics and produce a summarized output.

```
$ ./Gcomp -i1 "$INFILE-16bpppb-bigendian.raw" -ig1 $Z $Y $X 3 0 \
          -i2 "$OUTFILE-16bpppb-bigendian.raw" -ig2 $Z $Y $X 3 0 \
          -f 1
```

- Compare two 2D images using only PSNR.

```
$ ./Gcomp -i1 "$INFILE-16bpppb-bigendian.raw" -ig1 1 $Y $X 3 0 \
          -i2 "$OUTFILE-16bpppb-bigendian.raw" -ig2 1 $Y $X 3 0 \
          -m 7
```

4 Notes

If you need further assistance, you might want to contact us directly.

References

[1] J. Serra-Sagristà and F. Aulí-Llinàs, *Computational Intelligence for Remote Sensing*, ser. Studies in Computational Intelligence. Germany: Springer Verlag, June 2008, vol. 133, ch. Remote sensing data compression.