

# ADAMS

Advanced **D**ata mining **A**nd **M**achine learning **S**ystem

Module: adams-imaging-imagemagick



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# Chapter 1

## ImageMagick

ImageMagick® is a software suite to create, edit, compose, or convert bitmap images ([2]). On Windows, in order to process images with ImageMagick, you need to set the `IM_TOOLPATH` environment variable, pointing to the installation. Similar, for `dcraw`, you need to defined the `DCRAW_TOOLPATH` variable and, for `ufraw`, the `UFRAW_TOOLPATH` one.

The following ImageMagick actors available:

- `transformer.ImageMagickOperation` – performs the ImageMagick (convert, `dcraw`, `ufraw`) operations that the user selected from the class hierarchy.
- `transformer.ImageMagickTransformer` – performs any ImageMagick command on the incoming image that the `convert` tool<sup>1</sup> supports and outputs another image again.

Reading and writing images are done using the *ImageReader* transformer and *ImageWriter* sink:

- `ImageReader` – use the *ImageMagickImageReader* or *UIfrawImageReader*
- `ImageWriter` – use the *ImageMagickImageWriter*

There is no separate transformer for generating a WEKA instance, since the ImageMagick actors process and output `BufferedImageContainer` objects as well, just like the JAI actors. You can use the `BufferedImageFeatureGenerator` for generating WEKA output.

The example flow<sup>2</sup> in Figure 1.1 loads a single photo from disk and then uses ImageMagick to resize it to 90 by 90 pixels and scaling it by 200% (see 1.2). Finally, the modified image is displayed in the image viewer.

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<sup>1</sup><http://www.imagemagick.org/script/convert.php>

<sup>2</sup>`adams-imaging-imagemagick_script.flow`

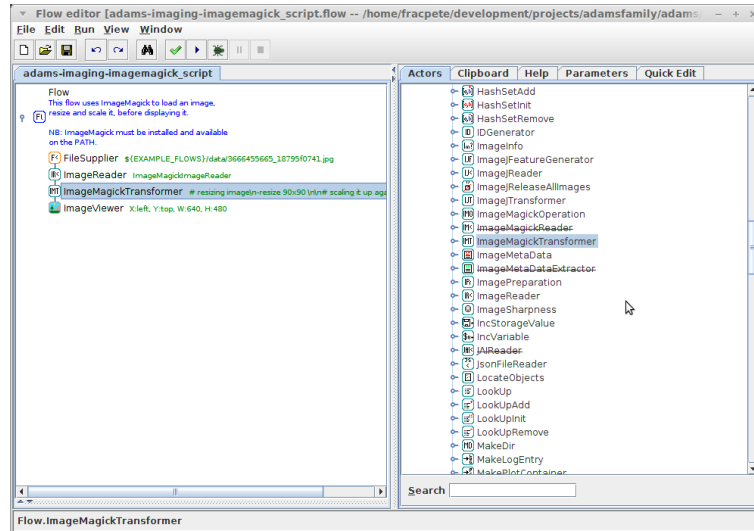


Figure 1.1: ImageMagick flow for processing (resizing) a single image.

```
# resizing image
-resize 90x90
# scaling it up again
-scale 200%
```

Figure 1.2: ImageMagick commands to resizing.

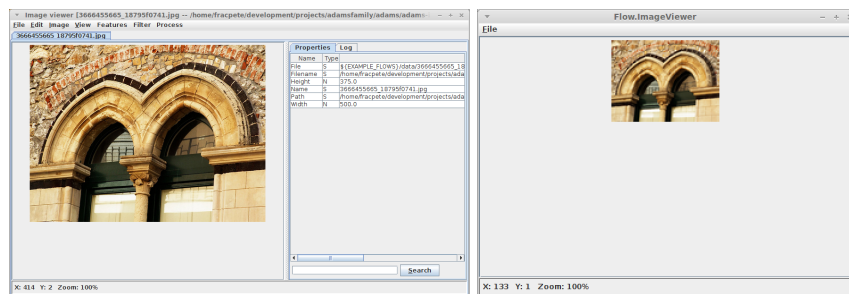


Figure 1.3: The original image.

Figure 1.4: The resized image.



# Bibliography

- [1] *ADAMS* – Advanced Data mining and Machine learning System  
<https://adams.cms.waikato.ac.nz/>
- [2] *ImageMagick* – Software suite to Convert, Edit, and Compose Images  
<http://www.imagemagick.org/>