

Article

## imgResize: A Matlab software for resizing images with various methods

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### Abstract

In present study, I developed the Matlab based software for resizing images, imgResize (Version 1.0). Various images with formats as PNG, JPG, GIF, etc., can be resized with specified scales or pixels. Users can choose different methods for resizing images. The executable software, full Matlab codes and user guide were given.

**Keywords** Matlab; software; image resizing.

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## 1 Introduction

Image processing is a technique that uses computer to process images for achieving a human-like visual system (Wu, 2006; Bhardwaj and Solanki, 2016). Image processing is a fundamental aspect for various sciences and technologies, for example, medical diagnosis, gene expression, landscape recognition, etc (Dogra et al., 2018). However, the often used software for image processing shorts of some functionality. The present study aimed to develop and present the Matlab based software (Zhang, 2012a-b, 2016, 2018, 2020, 2021a-b) for image resizing. Various images with formats can be resized with specified scales or pixels. Users can choose different methods for resizing images. Full Matlab codes and demo samples were given.

## 2 Method

### 2.1 Software package and Matlab source codes

The software for resizing images, imgResize (Version 1.0), was packaged as a WinRAR file (Fig. 1; see supplementary material). Matlab source codes are presented in the following

```
function imgResize
origin=input('Input the file name of raw picture (e.g., x.jpg, x.png): ','s');
target=input('Input the file name of generated picture (e.g., y.jpg, y.png): ','s');
```

```
sel=input('Choose the method for image resizing (1: Scale adjustment; 2: Pixel adjustment): ');
rgb=imread(origin);
if (sel==1)
res=input('Input inflation/reduction scale (0.5, 2, etc): ');
met=input('Choose the method for inflation/reduction (1: Bilinear; 2: Nearest): ');
if (met==1)
rgb=imresize(rgb,res,'bilinear');
elseif (met==2)
rgb=imresize(rgb,res,'nearest');
end
elseif (sel==2)
rows=input('Input desired row pixels (1000): ');
cols=input('Input desired column pixels (1000): ');
rgb=imresize(rgb,[rows cols]);
end
imwrite(rgb, target);
imshow(rgb);
```

## 2.2 User guide

Users may use the software following the procedures (Figs. 2, 3):

- (1) If you do not want to unzip the software package, put your image file, such as wjzhang.png, in the software package. In the package, double-click to open imgResize.exe
- (2) If you have unzipped the software package, double-click to open imgResize.exe directly in the unzipped folder.
- (3) On the opened DOS interface, enter your image file name as prompted, such as: wjzhang.png, and press Enter.
- (4) Enter the image file name you want to generate, such as zhang.jpg, and press Enter.
- (5) Select the method of image enlargement and reduction, that is, input 1 (by scale) or 2 (by pixels) and press Enter.
- (6) If you choose to process by scale, (i) enter the scale, such as 2, 0.5, etc.; (ii) select the image processing method, that is, enter 1 or 2, and press Enter.
- (7) If you choose to process by the number of pixels, enter the number of height pixels (row pixels) and the number of width pixels (column pixels), and press Enter.
- (8) If it is not unzipped, after a prompt box pops up, select "Yes" to allow the image file to be generated to be stored in the software package. Take out the generated image file from the software package for future use.
- (9) If it has been unzipped, take out the generated image file for use.

If it fails to run, it may be that the Matlab package was not installed, or the Matlab package and the software (2007 version) are incompatible due to the distinctive version difference.

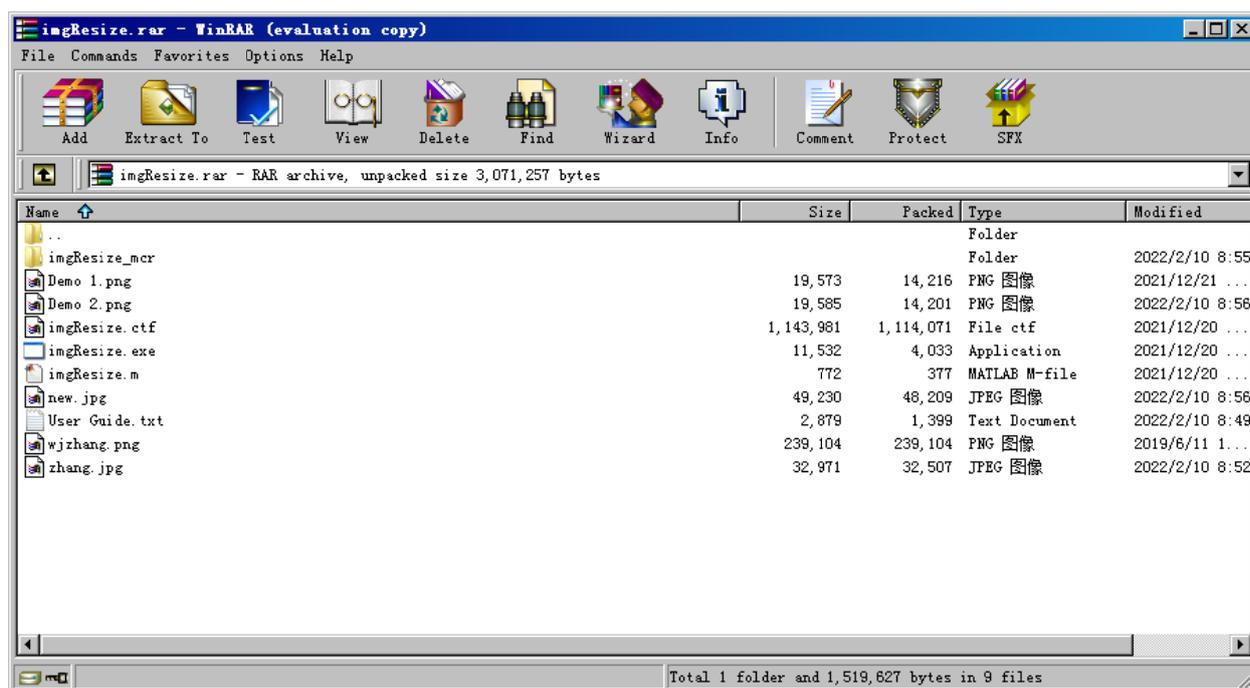


Fig. 1 Software package.

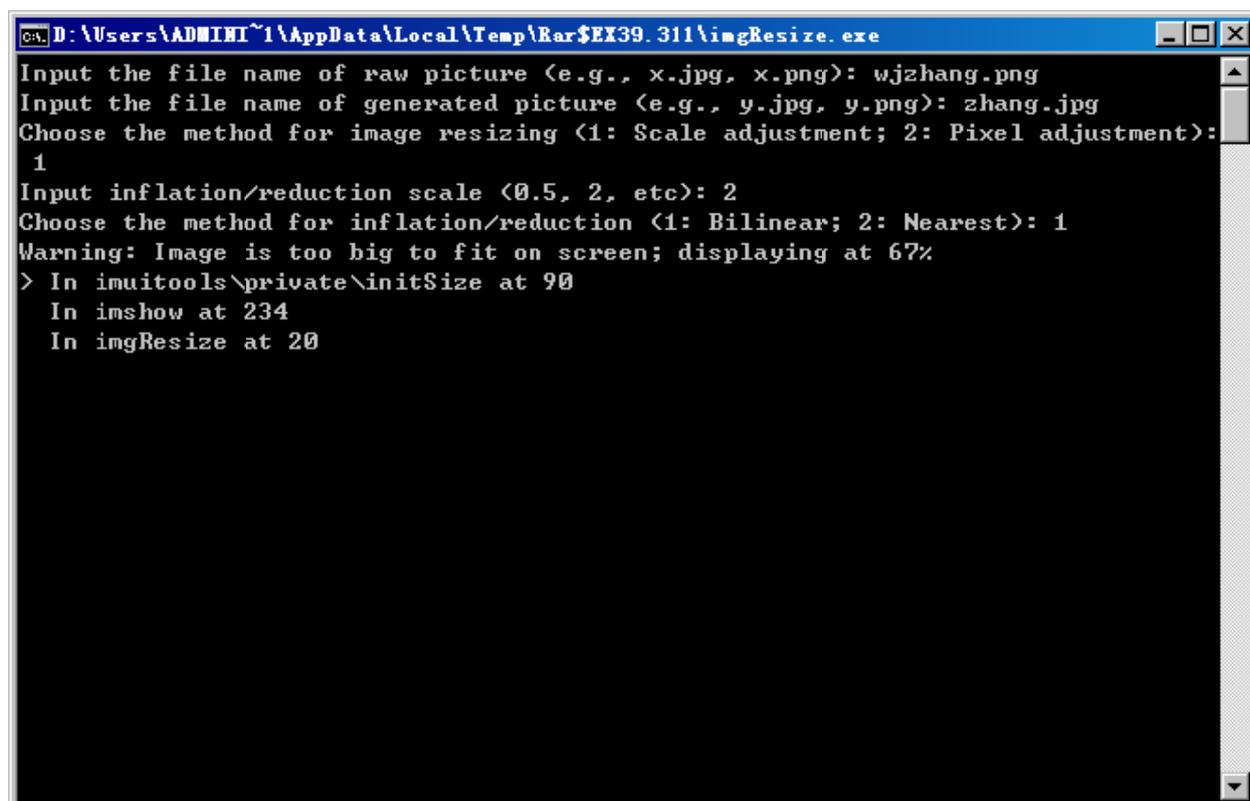
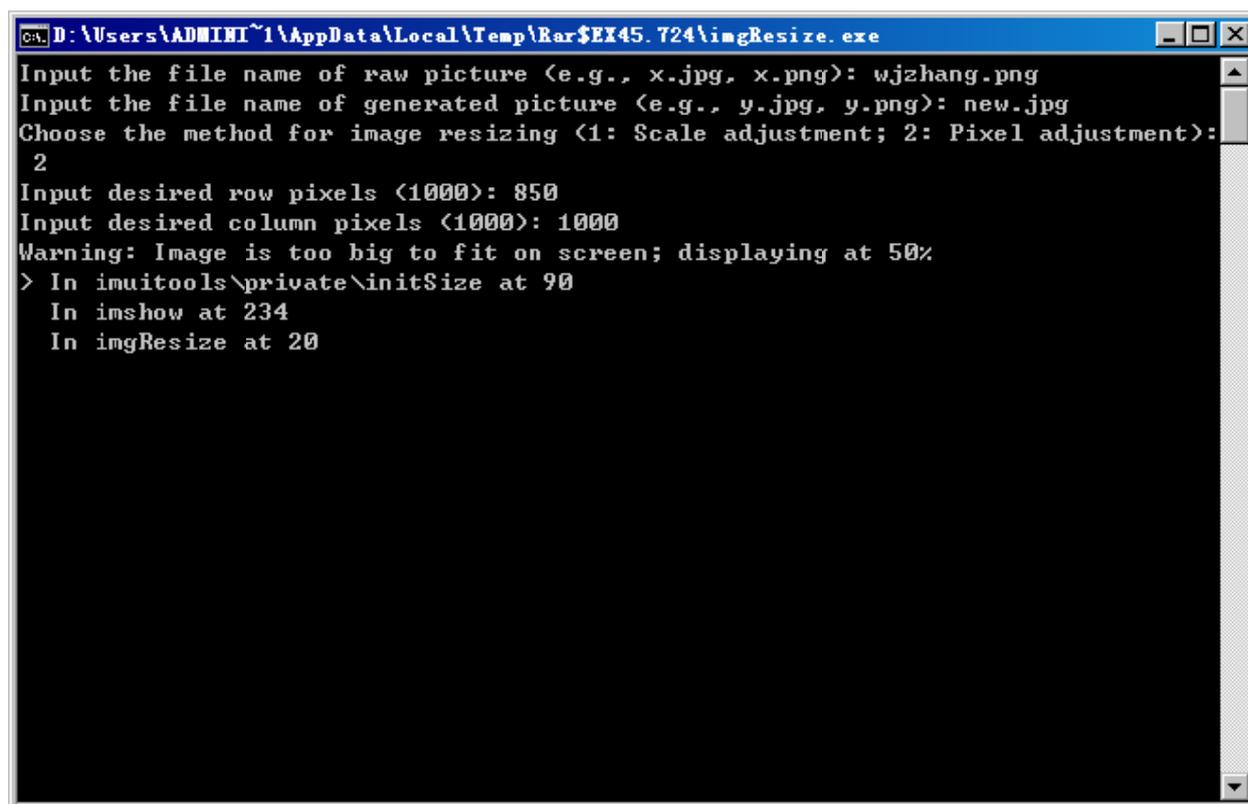


Fig. 2 User guide example 1.



```

D:\Users\ADMINI~1\AppData\Local\Temp\Rar$EX45.724\imgResize.exe
Input the file name of raw picture (e.g., x.jpg, x.png): wjzhang.png
Input the file name of generated picture (e.g., y.jpg, y.png): new.jpg
Choose the method for image resizing (1: Scale adjustment; 2: Pixel adjustment):
2
Input desired row pixels (1000): 850
Input desired column pixels (1000): 1000
Warning: Image is too big to fit on screen; displaying at 50%
> In imuitools\private\initSize at 90
   In imshow at 234
   In imgResize at 20

```

Fig. 3 User guide example 2.

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