

Put an Arrow

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Introduction:



Put an Arrow places arrows on BMP or Jpeg Images. There are 4 predefined arrow shapes but the user can also make custom shaped arrows by using the tools provided. Arrows can also be saved and reopened for later use. Icons (.ico) and some Bitmap (.bmp) files may also be used as “arrows”.

Arrows can be altered by using the controls in the upper left panel. “Hints” are available over most controls. To see a hint, place the cursor over the control in question.

How to use...

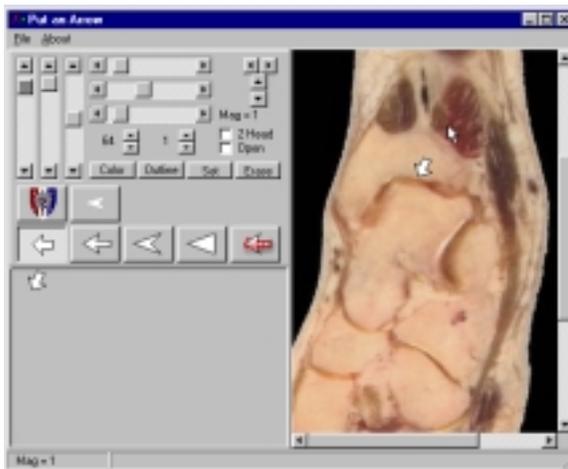


Load the image you wish to annotate by clicking on the file menu and selecting <Open> and then <Image>.



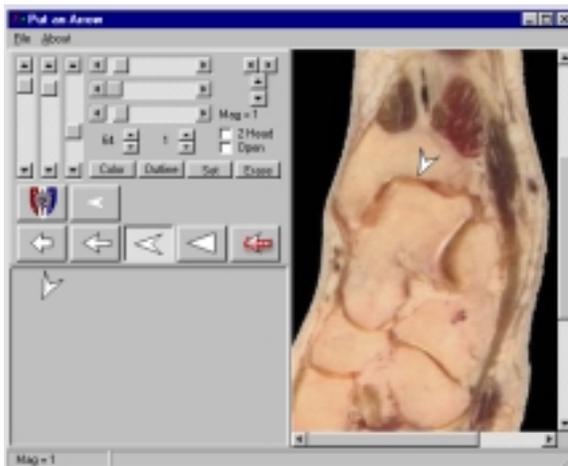
Once the image is loaded, arrows can be placed by clicking on the image. The arrow is not yet fixed and can be moved, rotated, scaled and altered in other ways.

Move the arrow by either clicking on the desired location or click and hold down the left mouse button. The arrow will follow the mouse cursor. You may also “nudge” the arrow by using < > ^ v controls in the upper right corner.

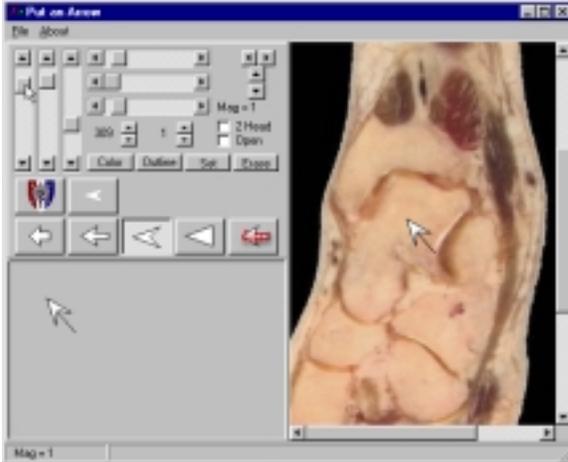


To rotate the arrow, press and hold the <SHIFT> key and then click and hold down the left mouse button. The tail of the arrow will align with and follow the mouse cursor.

Rotation angle can also be set using the ^ v control just above the “Color” button. The rate of change in degrees is controlled by the ^ v control above the “Outline button”.



Arrow type can be changed by clicking on one of the default arrow buttons or by using the slider controls in the upper left of the control panel.



The first up-down slider increases the length of the arrow. Here the arrow length is being increased producing a very thin tail.



Use the second up-down slider to control the length of the arrowhead.

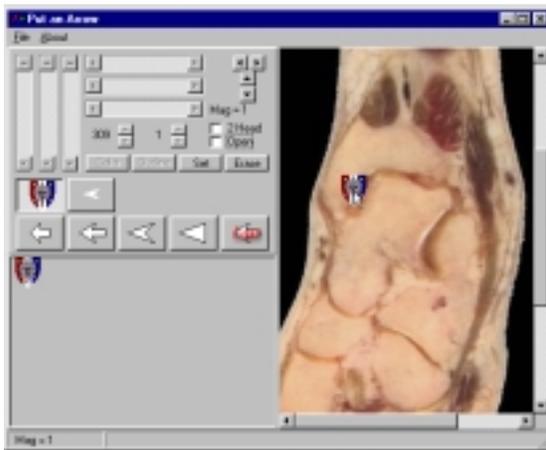
The third up-down slider controls the cut-back or indent of the arrow head.



The top left-right slider controls the width of the arrow head while the second left-right slider controls the width of the arrow shaft. Here the width of the tail is increased, producing a different arrow type.

This configuration is stored in memory and can be retrieved by clicking on the "Last" button. Additionally, the new arrow can be saved to file by clicking on <File>, <Save>, <Arrow>. The arrow can be reloaded by opening the saved arrow file.

Icons and Bitmaps...



This program can also use icons. If a default icon ("Default.ico") exists in the same directory as this program, it will be loaded automatically at start up and will appear on the Icon button (Red and Blue shield in this case). The icon can be moved just like an arrow but not rotated or scaled.

Bitmaps may also be used. If a default bitmap file ("Default.bmp") exists in the same directory as the program, it will be loaded automatically at startup and will appear as on the Bitmap button.

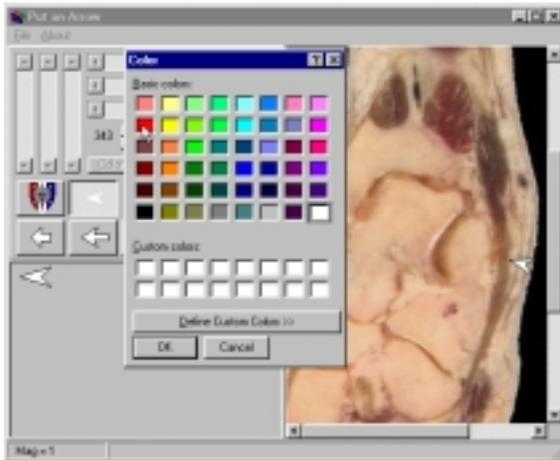
Setting an Arrow...



The arrow, once visible on the image is a part of the image and the image can be saved with the arrow in place. A second arrow can not be placed until the first arrow is "set" or blended with the image. This is done by clicking on the set button or by clicking on the image while holding down the <CONTROL> key. If you make a mistake, the arrow can be erased by clicking on the "erase" button. Once another arrow is placed on the image, the preceding arrow cannot be erased.



Colors...



There are an infinite number of colors available. The color of the arrow can be selected by clicking on the “color” button. A standard color dialog will open allowing the choice of multiple arrow colors. Once a color is selected, it will be applied to the current arrow. If the arrow has been “set” it will not change color.

The outline of the arrow can be changed in a similar manner by clicking on the “outline” button.



If a bitmap has a uniform area color, it may be possible to change its color. This is done by a right mouse click on the representation of the bitmap in the lower left window. A color dialog will open prompting for a color change.

Note: A right mouse click on a standard arrow in the lower left window will also open the color dialog.

Saving Arrows:

Arrows data are saved by choosing <File>, <Save>, <Arrow>. The arrow data including, colors, angle and scale (magnification) will be saved and can be retrieved by selecting <File>, <Open>, <Saved Arrow>. The retrieved data will be applied to the active arrow (arrow not yet set).

Loading Arrows:

As mentioned, arrow data may be loaded by selecting <File>, <Open>, <Saved Arrow>. Icon data and bitmaps may also be manually loaded. If the default Icon or default Bitmap files are not present in the program directory, the buttons will read “Icon” and “BitMap”. Clicking on either button will cause a file dialog to open and “bmp” or “ico” file can be loaded. If the default files were loaded at startup, the buttons will have representations of

the images. A “double click” on either button will activate the file dialog. Additionally, Icon and Bitmap files may be loaded by selecting <File>, <Open>, <Bitmap Arrow>.

Saving the Image:

The annotated image is saved by choosing <File>, <Save>, <Image>. There are two file options JPEG and 24-bit Bitmap. Jpeg quality factor is set to 95 by default but can be changed by selecting <File>, <JPEG Factor>.

A Word About Bitmap Arrows:

At present bitmap images cannot be rotated. While it is possible to rotate a bitmap, the method of mapping the bitmap to the image will not always work with linearly interpolated rotation of pixels. Nearest neighbor rotation will work but may result in jagged lines.

How are bitmap images mapped?

First use 8-bit bitmap files. The color to consider as transparent is keyed off the bottom left pixel of the image. All pixels that match this color will be ignored. The program looks for this pixel and then creates a mask that is applied to the image prior to mapping the bitmap file.



This bitmap image will translate to a red car only. The blue background will be considered as transparent by the program.



Future Plans:



Curved arrows.
Better anti-aliasing of arrows.
Rotating of bitmaps.



OK so shoot me...

Rotate the bitmap the same way you rotate the other arrows. And you can also flip the bitmap L-R. Useful for those curved arrow bitmaps we do not yet have.