

CS 2033

Multimedia and Communications

Lab 02: Imaging with Affinity Photo

- Image Processing -

REMEMBER TO BRING YOUR MEMORY STICK TO EVERY LAB!

INTRODUCTION

In CS1033, you learned how to create simple graphics in a photo editing program like Affinity Photo or Photoshop. These programs are very powerful and contain hundreds of tools, settings, and features that allow us to do so much more than just creating posters or business cards. There are tools for re-touching and re-colouring photos, moving and removing objects from photos, and even cloning objects! In this lab, you will learn some of these tools and features in Affinity Photo.

Note: In Lab 1, you were asked to complete some of the basic Affinity Photo exercises from CS1033 to get familiar with this program since it's not identical to Photoshop. You can refer back to those CS1033 Affinity Photo labs if you forget how to do something and need a refresher.

What you'll learn in this lab:

- Making selections with various selection tools
- Refining selections using feathering and ramp parameters
- Copying a selected object from one image into another
- Creating clipping masks on one or multiple foreground layers
- Removing blemishes and tattoos using various re-touching tools
- Removing larger objects from a photo using the Inpainting Brush Tool
- Cloning an object from a source site using the Clone Brush Tool
- Fixing up mistakes from cloning where colours are misaligned

SETUP

Before starting the exercises described below, follow these steps first to get things set up:

- Open File Explorer and navigate to your USB drive folder.
- Step into your **cs2033/labs** folder, which should have been created in Lab #1
- Create a subfolder within **labs** and call it **lab02**
- In a browser, open <http://www.csd.uwo.ca/~bsarlo/cs2033b/labs/lab02/img> and download all of the files listed there and move them into **cs2033/labs/lab02**.
- Open Affinity Photo. If you don't see the icon on the desktop, look for it in the main menu or click the magnifying glass at the bottom and search for it there

EXERCISE 1: COPYING WITH SELECTIONS

Here's a preview of what you will be creating in this exercise:

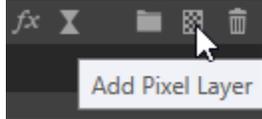


1. In Affinity Photo, open *moon.jpg* and *hill.jpg*.
2. Start by going into the *moon.jpg* tab.
3. Click the Selection Brush Tool.



4. At the top, set the Width (brush width) to 25 px.
5. Click down somewhere on the moon and drag the cursor (still holding the click down) around the moon to grow the selection to the entire circle of the moon.
6. While dragging the cursor around the moon, you may have to zoom in close on the moon. You can do this by holding Ctrl down and scrolling with the mouse's middle scroll wheel. If the mouse doesn't have a wheel, another option is holding Ctrl down and hitting the + (plus) key. Zooming back out can be done by holding Ctrl down and scrolling the opposite way on the mouse wheel or hitting the - (minus/dash) key.
7. Zoom in and look at the border of the moon. It is likely that the selection doesn't make a perfect circle around the moon.
8. Click the "Refine" button near the top.
9. In the Refine Selection panel, set the Feather to about 20 – 25 px and set the Ramp to 10 px. Notice when you change each of these, the preview will show a small, subtle change to the blue glow around the moon.
10. Push Apply.
11. Now the selection should be a bit larger than the moon. This is pretty good but it's a bit too large, and we can make a more precise selection a different way.
12. Hit Ctrl+D to deselect (release the current selection).
13. Click on the Flood Select Tool (magic wand icon)
14. At the top, set the Tolerance to 50%.

15. Click on the moon **in a white area!** It is important that you click on a white region of the moon rather than the blue-ish regions of the moon. You can try clicking the blue area and see that the selection includes the sky because it's a similar colour. Your final selection should be on the white part of the moon so that only the moon itself is selected.
16. With the moon selected properly, hit Ctrl+C to copy it.
17. Go into the other tab for *hill.jpg*.
18. Add a new pixel layer.



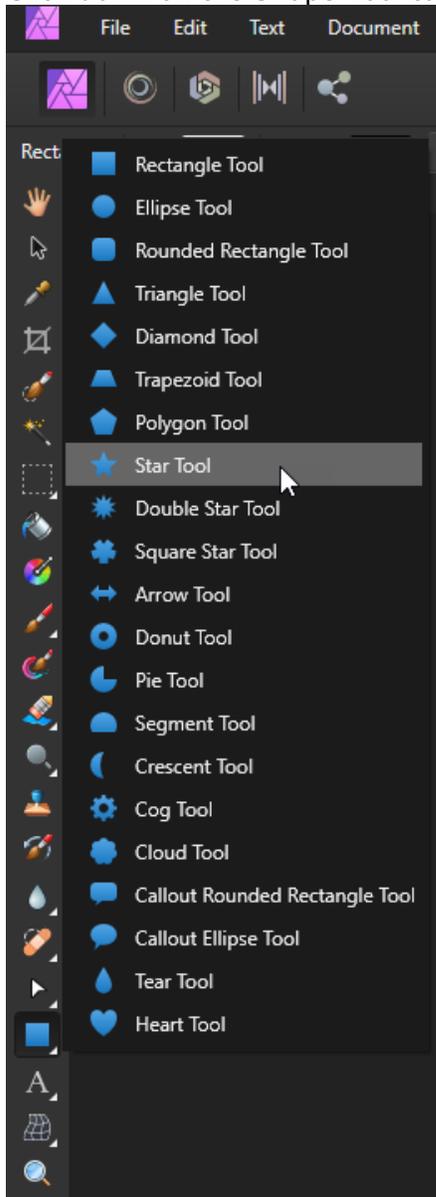
19. In the new layer, hit Ctrl+V to paste the selected moon.
20. Click the Move Tool (arrow icon).
21. Move the moon around by clicking and dragging it.
22. Resize the moon by clicking a corner of the bounding box and dragging it in or out.
23. The placement and size doesn't have to be the same as the preview shown to you in here. Just choose a size and place that seem appropriate.
24. Save this file into your **cs2033/labs/lab02** folder with the name **ex1_moon.afphoto**.

EXERCISE 2: CLIPPING MASKS

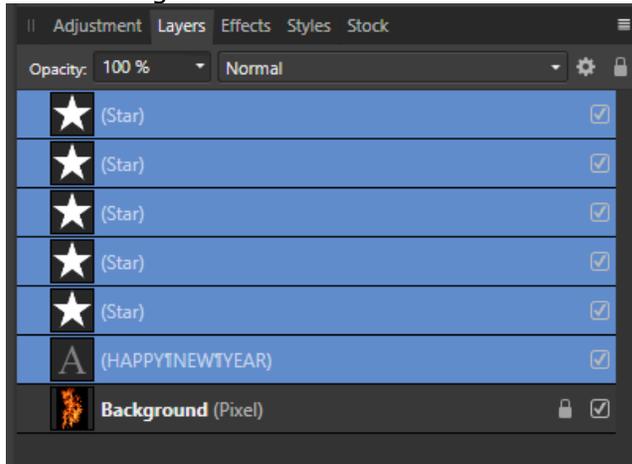
Here's a preview of what you will be creating in this exercise:



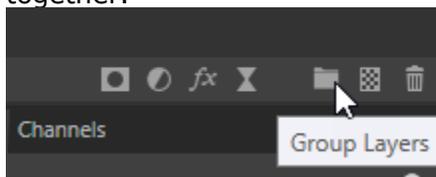
1. Open *fire.jpg* in Affinity Photo.
2. Click the Artistic Text Tool (the letter "A" icon) and click near the middle of the fire image.
3. Type "HAPPY NEW YEAR" but hit Enter between each word so that each is on its own line.
4. The text might be tiny by default. Select the text you just typed (zoom in if that helps), and at the top, change the font size to 144 pt.
5. Change the font type to "Berlin Sans FB"
6. Align the text to be centered.
7. Move the textbox to the middle area of the fire so that it is mostly covered by the flames.
8. Make sure the text layer is above the fire background layer in the Layers panel. If not, drag it up to become the top layer.
9. Right-click on the text layer in the Layers panel, and click "Mask to Below".
10. You should see that the text is now displaying the flames texture on it, and the rest of the background is hidden.
11. Save this file into your **cs2033/labs/lab02** folder with the name **ex2_text.afphoto**.
12. Re-open *fire.jpg*.
13. Repeat steps 2-8 to add the same text to this image, but do NOT apply the clipping mask!
14. Click down on the Shape Tool to see the menu of shapes and select the Star Tool.



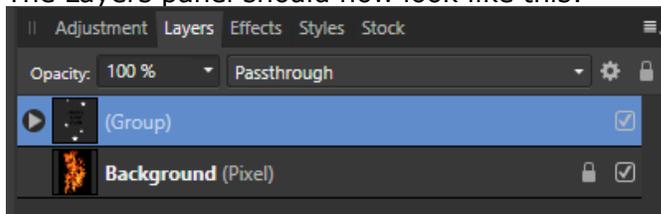
15. Use this tool to add 5 stars of different sizes around the image. The size and positions aren't important as long as each one is at least partially over the flames.
16. Select the text layer in the Layers panel.
17. Hold Ctrl and click on each of the star layers so that all the stars and the text layers are all selected together.



18. At the bottom of the Layers panel, click the folder icon to group these selected layers together.



19. The Layers panel should now look like this:



20. Right-click on this Group and select "Mask to Below".
21. The flames should now be visible on all the stars and text, and the rest of the background should be invisible.
22. Save this file into your **cs2033/labs/lab02** folder with the name **ex2_stars.afphoto**.

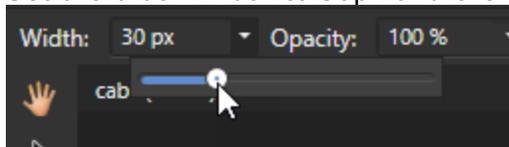
EXERCISE 3: RETOUCHING PHOTOS

a) Healing Brush Tool and Blemish Removal Tool

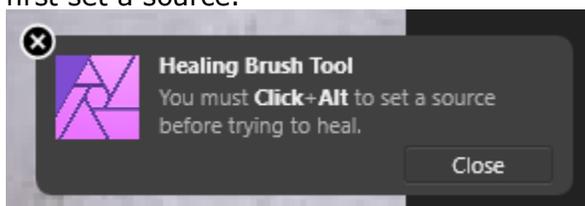
Here's a preview of what you will be creating in this exercise:



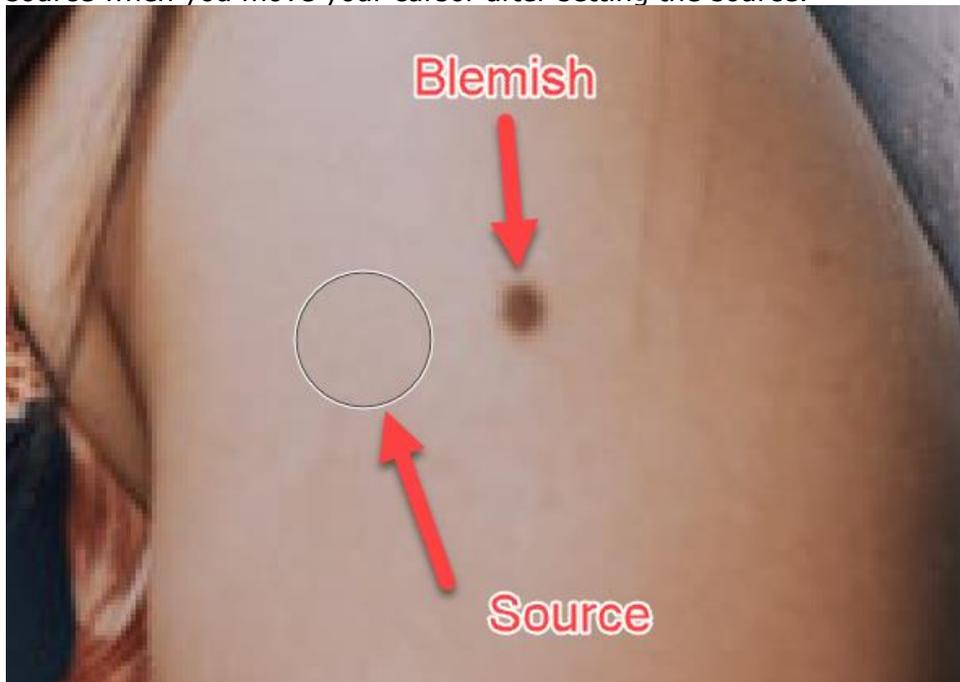
1. Open *woman.jpg* in Affinity Photo.
2. Take a look at her arm near her shoulder to see small blemish.
3. Click the Healing Brush Tool (bandage icon).
4. Near the top-left corner, click the arrow beside Width to bring up the brush width slider.
5. Set the brush Width to 30px and click somewhere else to close that slider.



6. Zoom in on the woman's shoulder.
7. If you click with this brush as it is now, a warning will pop up to remind you that you must first set a source.



8. Hover your cursor over a smooth part of her shoulder near the blemish, but not touching it. This will be your source so it should be unblemished but have similar colour tones as the area with the blemish.
9. When you find a good source area, hold the Alt key and click in that spot. Notice that crosshairs (+) are displayed when you hold Alt, and they remain in the center of the source when you move your cursor after setting the source.



10. Move your cursor to the blemish so that it is around the center of your brush circle. Notice a preview is shown in this circle as you move it around.
11. Click down on the blemish to cover it with the source texture.
12. Click on another tool, like the Move Tool (arrow icon) to get out of the Healing Brush mode.
13. Save this file into your **cs2033/labs/lab02** folder with the name **ex3_healing.afphoto**.
14. Re-open *woman.jpg* (the original image with the blemish).
15. Click the Blemish Removal Tool (bandage with a semi-circle icon).
16. Just like in the previous tool, the brush Width should be set to 30px.
17. With this tool, a source does not have to be set first.
18. Hover your cursor over the blemish and click. The blemish should be automatically removed.
19. Hit Ctrl+Z to undo this blemish removal. Even though this worked properly, there's another option to see that may be necessary in some cases.
20. To clarify, you should now be back to seeing the blemish and using the Blemish Removal Tool with a Width of 30 px.
21. Hover your cursor over the blemish.
22. Click down but do not release it yet. Drag the cursor around and watch the preview change inside your brush circle as you move it. Even drag it over her clothes just to see how it

updates the brush accordingly.



23. Drag it back to her arm and find a suitable area that is unblemished to release the mouse. The tool will use that as the source and cover the blemish with that chosen area.
24. Save this file into your **cs2033/labs/lab02** folder with the name **ex3_removal.afphoto**.

b) Patch Tool

Here's a preview of what you will be creating in this exercise:



1. Open *tattoo.jpg* in Affinity Photo.
2. Observe the tattoo on the woman's shoulder that says "music".
3. Click the Patch Tool (wider bandage icon).
4. Click down somewhere near the tattoo but it doesn't have to be tight (leave a bit of space around it) and hold it down.
5. Slowly drag the cursor around the perimeter of the tattoo so that it completely surrounds the tattoo with some space around the edge. Don't worry about the diagonal line that looks like it cut through the tattoo as you do this – they just automatically close off the shape.



6. Once you have surrounded the tattoo completely, let go of the mouse clicker to finish making the selection.



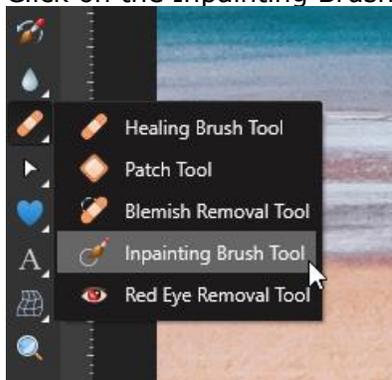
7. Move your cursor around and see how this selection shows a live preview of the replacement based on the position of the cursor (similar to the Blemish Removal Tool).
8. Find an unblemished area of skin, perhaps below the tattoo, and click the mouse there to replace the selected tattoo region with this clicked-on region.
9. The tattoo should be completely removed seamlessly!
10. Click another tool or double-click on the canvas to let go of the selection.
11. Save this file into your **cs2033/labs/lab02** folder with the name **ex3_patch.afphoto**.

c) Inpainting Brush Tool

Here's a preview of what you will be creating in this exercise:



1. Open *shore.jpg* in Affinity Photo.
2. Look around the photo (zoom in if it helps). The main things to observe are the two people on the beach and the line of windmills just above the water on the right side. We want to remove the two people, along with their shadows, and the line of windmills.
3. Click on the Inpainting Brush Tool (paintbrush in a circle icon).



4. Choose an appropriate Width for your brush – around 20 – 30 px.
5. Click down on the left person and drag the cursor back and forth over their body to cover it with the red translucent paint.



6. Let go of the mouse when you finish covering this person. They should now be removed and turned to sand!
7. Repeat this with the second person. There's a little dog in front of this person, so remove the dog as well.
8. The long shadows of the people also have to be removed. Repeat this process to remove the shadows.
9. At this point, the beach should look clean and free of any humans... and canines!
10. Zoom in on the line of windmills.
11. One at a time, use this Inpainting Brush Tool to remove each windmill.
12. When all the windmills are properly removed, zoom back out to double check that everything looks fine.
13. Save this file into your **cs2033/labs/lab02** folder with the name **ex3_inpaint.afphoto**.

EXERCISE 4: CLONING SHEEP... OR HORSES!

Here's a preview of what you will be creating in this exercise:



1. Open *horse.jpg* in Affinity Photo.
2. Click the Clone Brush Tool (stamp icon).

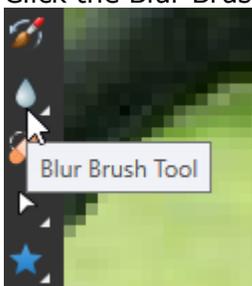


3. Zoom in on the horse's face.
4. Hold down Alt and click the mouse somewhere around the horse's nose or the top of its head. This will be the cloning source (start point). If you ever feel that your initial source is not ideal, you can choose a new source the same way (Alt+click).
5. Zoom back out so that you can see the full picture.

6. On the left half of the screen, click down where you want the cloned horse to begin.
7. When you click down, hold it down and drag around to draw a big region at once. You can feel free to let go of the mouse and resume separately too – in fact, it's a good idea to do this every so often in case you make a mistake and want to undo the latest patch of clone painting without losing too much progress. While dragging the clone brush to duplicate the horse, it is best to look back and forth between the original horse (watch the + icon move around on it) and the new horse being painted. Looking at both will help you to paint effectively without going too much out of the lines!
8. Zoom in or out as needed while you draw out this clone. You also may want to change the Width of the brush at the top so that it is smaller while painting the edges and larger while painting the inside of the horse.
9. Don't worry too much if you paint out of the lines – i.e. cloning the trees and grass along with the horse itself. You may see areas around the edges where the shades of green don't match perfectly because you cloned them from the original horse but they don't line up with the grass and leaves on the left side. You don't want too much of this, so try to be careful, however it's still ok if it happens a bit since we can fix it, as explained below.
10. Complete the horse clone as best as you can.
11. When finished, look around the edge of your new horse to look for areas where grass or leaves were cloned and don't blend in perfectly.



12. For any areas like this, we will fix it by cloning nearby grass/leaves.
13. Make a new clone source using Alt+click on the grass/leaves near any of these misaligned areas and then paint over them to clone the greens from that area. You may need to go around the area with multiple clones of nearby grass/leaves so continue selecting a clone source and painting over these areas until they blend well.
14. Another option to help fixing these kinds of misaligned colour regions is to apply a blur along these edges.
15. Click the Blur Brush Tool (raindrop icon).



16. Change the Width to about 5px and zoom in close on these areas.

17. Click down on an edge between two misaligned colours and gently drag the cursor along that edge to blur the two together and make them blend better.

EXERCISE 5: PRACTICE PROBLEMS

These practice problems are not explained step-by-step like the previous exercises. Instead, you have to apply what you learned to create the images shown below.

- a) Use *greece.jpg* as a base to create the image below.
NOTE: The font used here is "Impact" size 144 pt.



- b) Use *back-tat.jpg* as a base to create the image below.
NOTE: You may use any re-touching tool(s) to do this (there is more than one way to do it)



This concludes this lab session. Call your TA over to check your work and receive your mark for this lab.

REMEMBER TO REMOVE YOUR MEMORY STICK FROM YOUR MACHINE AND PUT IT IN YOUR BACKPACK! (don't forget it)! 😊