

## Assignment: Image Sharpening Techniques in Photoshop

### Objective:

To understand and apply various image sharpening techniques in Adobe Photoshop, including Unsharp Mask, Smart Sharpen, High Pass Sharpening, AI-Based Neural Filters. The goal is to develop a nuanced approach to sharpening while maintaining natural image quality.

### History & Background of Sharpening Techniques

Sharpening has its roots in traditional darkroom techniques, where photographers enhanced contrast along edges using optical and chemical methods. Digital sharpening emerged with image processing in the 1980s, evolving through algorithms that enhance edge contrast without significantly degrading image quality. Today, modern AI-based sharpening techniques complement traditional methods by reducing noise and intelligently detecting key details.

### To Start: Duplicate and Prepare Your Master File

- Open your master image in Photoshop.
- Duplicate the file.
- Go to File → Save As and rename to avoid overwriting your original.
- Resize your file to 3000 pixels longest side.
- \* Flatten the layers.
- Save As and name this file: Last name\_First initial\_sharpen3000

From here you will return to this file and duplicate it for each sharpening technique.

### Sharpening Methods & Applications

These sharpening methods can be used for **final output sharpening** or for **selective creative sharpening**. When applying output sharpening, resize the image to its final output dimensions before sharpening. The required amount of sharpening varies depending on the intended output. For example, a print on newsprint or uncoated paper will require more sharpening than a print on glossy paper due to differences in how the ink spreads and absorbs into the material.

**When sharpening an image, always view it at 100% to 300%** to accurately assess the effect. Afterward, fit the image to screen to double-check the overall impact. The goal is to enhance detail subtly—not to draw attention to the sharpening itself. Avoid over-sharpening, which can lead to halos and other distracting artifacts. We want viewers to appreciate the image, not notice the sharpening.

## 1. Unsharp Mask (USM) – Classic & Versatile

**History:** Developed from film photography techniques where a blurred negative was overlaid onto an original to enhance edges.

### Steps to Apply:

[ ] Open your image in Photoshop. [ ] Duplicate the background layer (**Ctrl + J / Cmd + J**). [ ] Convert the layer to a **Smart Object (Layer > Convert for Smart Filters)**. [ ] Navigate to **Filter > Sharpen > Unsharp Mask**. [ ] Adjust settings: [ ] **Amount:** 100-150% for standard sharpening. [ ] **Radius:** 0.5–1.5 pixels for fine details, 2–3 pixels for textures. [ ] **Threshold:** 3–10 to avoid sharpening smooth areas (such as skin in portraits).

[ ] For selective area sharpening, add a **Layer Mask (Layer > Layer Mask > Hide All)** and selectively paint sharpening onto key details (eyes, textures, etc.).

[ ] Refine by adjusting **layer opacity** if needed.

## 2. Smart Sharpen – Advanced Control

**History:** Introduced in Photoshop to provide better edge detection and noise reduction than Unsharp Mask.

### Steps to Apply:

[ ] Open your image in Photoshop. [ ] Duplicate the background layer (**Ctrl + J / Cmd + J**). [ ] Convert the layer to a **Smart Object (Layer > Convert for Smart Filters)**. [ ] Go to **Filter > Sharpen > Smart Sharpen**. [ ] Adjust settings: [ ] **Amount:** Similar to Unsharp Mask but offers more refinement. [ ] **Radius:** Lower for fine details (0.5–2px), higher for textures. [ ] **Reduce Noise:** Helps clean up digital noise from sharpening. [ ] **Remove Blur Type:** Choose **Lens Blur** for the most natural sharpening. [ ] Use **Layer Masks** for selective sharpening.

## 3. High Pass Sharpening – Edge Contrast Enhancement

**History:** Developed as a frequency-based sharpening method, effective for textures and contrast improvement.

### Steps to Apply:

[ ] Open your image in Photoshop. [ ] Duplicate the background layer (**Ctrl + J / Cmd + J**). [ ] Convert the layer to a **Smart Object (Layer > Convert for Smart Filters)**. [ ]

Change the **Blend Mode** to **Overlay** or **Soft Light**. [ ] Apply **Filter > Other > High Pass**. [ ] Set the **Radius** between **1–3px** (higher for larger images). [ ] Adjust **Opacity** for subtle sharpening. [ ] Use **Layer Masks** to refine specific sharpening areas.

**4.** Photoshop's **Super Zoom**, found within the Neural Filters, is an AI-powered feature that allows you to zoom in and crop an image, then uses AI to add details and compensate for the loss of resolution, effectively upscaling the image. History: AI-powered sharpening developed in recent Photoshop versions to intelligently detect details and enhance images without over-processing.

#### Steps to Apply:

[ ] Open your image in Photoshop. [ ] Duplicate the background layer (**Ctrl + J / Cmd + J**). [ ] Convert the layer to a **Smart Object (Layer > Convert for Smart Filters)**. [ ] Go to **Filter > Neural Filters**. [ ] Enable **Super Zoom**. [ ] Choose zoom level. [ ] Refine by moving your subject into the zoom box choosing your composition. [ ] Apply to the image and refine with masks if needed.

#### Final Steps: Exporting & Evaluating

[ ] Reduce layer opacity for a natural look. [ ] Compare different sharpening methods and determine which works best for the image. [ ] Export the final image to desired format [ ] **File > Save As** (for high-quality print formats like PDF, JPG, TIFF).

#### Assignment Requirements:

- Every image needs sharpening.
  - You cannot sharpen an out of focus image.
  - Start with a sharp in focus image and sharpen from there.
- You will be amazed...

#### PART 1 -Techniques for Sharpening

- Choose ONE image to sharpen with the 3 techniques, Unsharp Mask, Smart Sharpen and High Pass.
- The selected image should be color corrected and cleaned up before sharpening. (A finished image)
- Save As, flatten the file, size the file**  
(3000px on the longest size 240ppi, 8bit)
- For each sharpening technique create a **duplicate file** of that one image and apply the technique.
- Save sharpened files as a .psd, do not flatten the layers. I want to see the sharpened layer over the non-sharp layer.

**Title File:**

(Name Last\_ first initial\_ **Unsharp**.PSD)

(Name Last\_ first initial\_ **SMART**.PSD)

(Name Last\_ first initial\_ **HighPass**.PSD)

**PART 2 - Selective Sharpening Exercise**

Choose 5 different images to explore the technique of selective sharpening—applying sharpening only to a specific part of the image rather than the entire frame.

Use a layer mask to control where sharpening is applied. This technique helps guide the viewer's attention to the most important elements in your image.

**Here are a few ideas to get you started:**

- Portrait: Sharpen the eyes or hair to create focus and intensity.
  - Studio Shot: Apply sharpening to your main subject to separate it from the background.
  - Landscape: Enhance foreground elements or textured areas like rocks or tree bark.
  - Still Life: Sharpen the product or object while leaving the background soft.
  - Street Photography: Draw the eye to a gesture, face, or key detail in the scene.
  - The image should be color corrected and cleaned up before sharpening.
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- To view your layer mask while working, **Option-click** (Mac) or **Alt-click** (Windows) on the layer mask in the Layers panel. Ensure your masks are clean and precise to avoid applying sharpening in unwanted areas.

**Title File:**

(Name Last\_ first initial\_ **Selective1**.PSD)

(Name Last\_ first initial\_ **Selective2**.PSD)

.....etc.

**Evaluation Criteria:**

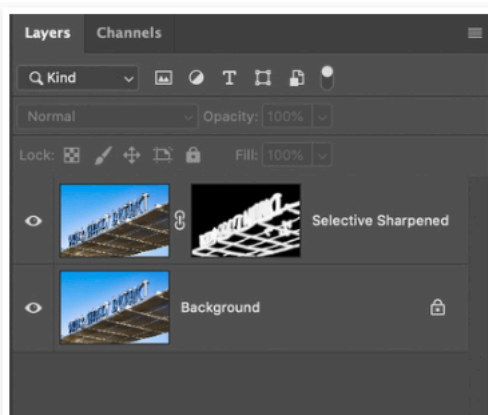
- Proper application of sharpening techniques.
- Effective use of selective sharpening (layer masks, blend modes).
- Avoidance of sharpening artifacts (halos, excessive contrast).
- Clear explanation of choices in sharpening application.

**Reflection Questions:**

1. Which sharpening method provided the best results for your image?
2. How did selective sharpening improve the final image?
3. What were the limitations of each sharpening method?

**Submission Instructions:**

- Submit 8 layered .psd images total, through Canvas in the proper portal.
- 3 techniques same image
- 5 different images using selective sharpening (Each image will have a Layer Masks)
- In the comments add a short write-up explaining the process and choice of sharpening technique along with any additional thoughts of questions..



**•Unsharp Mask**

Movie: 001 Sharpening Prep/Unsharp Mask <https://youtu.be/LnQtJ81D0HA>

**••••High Pass Sharpening**

Movie: 005 High Pass Sharpening <https://youtu.be/Z2dpt4-lxfU>

Applying **Selective Creative Sharpening** to the image

Movie: 006 Localized Sharpening <https://youtu.be/3m8J3vdhLbI>