Co-funded by the European Union

Computer Graphics and Animations

ADOBE PHOTOSHOP 8

Advanced Image Retouching;
Camera Raw

dr. Bojan Prlincevic & Ivan Sarkocevic
ASSKM

АТУСС

UNIVERSITY OF LJUBLJANA
Faculty of Electrical Engineering

POLITÉCNICA

University of Pristina
Kosovska Mitrovica

W₃

Introduction to Frequency Separation in Photoshop

- **Frequency separation** is used for skin retouching while preserving texture

- Unlike basic retouching tools, it separates image detail from color

- Creating two layers: **High Frequency** (texture) and **Low Frequency** (color/tone)

- Previously used tools: *Spot Healing Brush Tool*, *Remove Tool*, *Patch Tool*, etc.

- Cleaning up blemishes destructively on a new layer

- Using *Spot Healing Brush Tool* for small blemishes; *Patch* or *Remove Tool* for larger ones

- Merging cleaned layers using shortcut: **Ctrl + Shift + Alt + E** (Win) or **Cmd + Shift + Opt + E** (Mac)

Creating Frequency Layers

- Duplicating the merged layer twice: labelling them **High Freq** and **Low Freq**

- Working on **Low Frequency layer**: applying **Gaussian Blur** to remove textures

- Adjusting blur until skin textures just disappear (6 px radius)

- **High Frequency layer** captures textures extracted from the blurred version

- Using **Apply Image** to subtract texture from the low frequency

- Apply Image settings for 8-bit:
  - **-** Layer: Low Freq | Blending: Subtract
  - **-** Scale: 2 | Offset: 128 | Channel: RGB

- Changing High Freq blending mode to **Linear Light**

Using Mixer Brush for Blending

- Grouping High and Low Freq layers together (**Ctrl/Cmd + G**)

- Working only on **Low Frequency** layer for tone blending

- Using *Mixer Brush Tool* to blend skin tones naturally

- Settings for Mixer Brush:
  - Clean Brush (enabled) | Auto-clean after each stroke
  - Wet: 9% | Load: 75% | Mix: 90% | Flow: 100%

- Painting in the direction of face contours (cheeks, jawline)

- Using a smaller brush for fine areas (under eyes, around nose)

- Avoiding texture loss by keeping strokes subtle and directional

Final Results & Considerations

- Toggling before/after using **Alt (Option) + Click** on backup layer for comparison

- Result: smooth skin tones with preserved pore-level detail

- The method works on other areas like body or even clothing textures

- High-resolution images yield better frequency separation outcomes

- Effective for professional-grade skin retouching with control

- Always maintaining backups to allow adjustments later

- Recommended for advanced retouching beyond beginner tools

Advanced Face Retouching with the Liquify Filter

- **Liquify Filter** is a powerful Photoshop tool used for detailed face modifications

- Accessing via *Filter > Liquify* after converting the image layer to a **Smart Object**

- The *Face-Aware Liquify Tool* detects facial features automatically

- Editing individual parts: **eyes**, **nose**, **mouth**, **face shape**

- Eyes: Adjusting size, height, width, and rotation for each eye separately

- Nose: Modifying height and width to reshape appearance

- Mouth: Controlling smile, lip size, mouth height, and width

- Face shape: Altering forehead, chin, jawline, and overall face width

Workflow & Practical Use

- Saving the previously used image as JPEG before starting (**Ctrl/Cmd + Shift + S**) and opening it as a new document

- Converting layer to Smart Object for **non-destructive editing**

- Using **preview toggle** to compare before and after changes

- Aiming for subtle adjustments to maintain **realistic retouching**

- Overuse leading to unnatural or exaggerated results

- **Slimming face**: reducing width, increasing forehead height

- Adjustments guided by intent: realism vs. creative distortion

- Experimenting with features to learn flexibility of the tool

Exercise 1

- Advanced retouching by isolating textures from tones
- Goal: improving an image with heavy blemishes using non-destructive editing
- Begin by importing the acne image via *File > Open*
- Unlock background layer and create a new empty layer for healing
- Use *Spot Healing Brush Tool* set to **Sample All Layers**
- Remove pimples, spots, and blemishes from face, shoulders, and hands
- Confirm results by toggling layer visibility (before/after check)
- Merge visible layers with **Ctrl + Shift + Alt + E** (**Cmd + Shift + Opt + E** on Mac)

Exercise 1

- Duplicate merged layer twice: name one **Low Frequency**, the other **High Frequency**

- Apply **Gaussian Blur** to Low Frequency layer (adjust until skin texture fades)

- On High Frequency layer, use *Image > Apply Image* with:
  - Layer: Low Frequency
  - Blending: Subtract, Scale: 2, Offset: 128, Channel: RGB, Opacity: 100%

- Set High Frequency layer's blending mode to **Linear Light**

- Group both layers for organized editing (**Ctrl/Cmd + G**)

- Select Low Frequency layer and choose *Mixer Brush Tool*

- Mixer Brush settings: soft round brush, Clean Brush, Wet: 9%, Load: 5%, Mix: 90%, Flow: 100%

Exercise 1

- Paint in the direction of facial contours; carefully follow natural shadows and highlights to avoid flattening facial features

- Reassess Gaussian Blur strength or Mixer Brush usage if the result doesn't look natural

- Some detail loss may occur; adjust with **Curves** or **Levels** if needed

- Further enhancement: apply **Dodge & Burn** or other local adjustments

- Reselect facial areas and apply subtle Gaussian Blur or tone correction

- Reduce adjustment opacity to maintain natural look (34% opacity)

- Final result shows significant improvement despite challenging initial condition

Exercise 2

- Begin by merging all visible layers using **Ctrl + Shift + Alt + E** (Win) or **Cmd + Shift + Option + E** (Mac)

- Convert the merged layer to a **Smart Object** for non-destructive editing

- Access the **Liquify Filter** from the Filter menu

- Use the *Face-Aware Liquify Tool* to adjust facial features with precision

- Modify eye size to correct asymmetry and adjust inter-eye distance

- Reduce intensity of facial expression by lowering the smile and repositioning lips

- Slim down facial structure and shorten forehead for proportional refinement

- Compare before and after images to evaluate changes in facial balance and expression

Advanced Color Correction & Camera Raw

- Advanced **color correction** and **grading techniques** in Photoshop

- Application of **Levels** and **Curves** for tonal and color adjustments

- Utilization of the **Camera Raw plugin** for non-destructive color workflows

- Technique for **transferring color grading** from one image to another

- Methods for **adding color to black and white images**

- Exploration of **hidden color grading tools and features** within Photoshop

- Emphasis on professional, flexible approaches to enhancing image aesthetics

Advanced Use of Levels in Photoshop

- Levels adjustment enables precise **color correction** and **tonal balance**
- The histogram splits into **shadows** (left), **midtones** (middle), **highlights** (right)
- Holding **Alt/Option + Auto** to reveal different **auto enhancement algorithms**
- Selecting and saving preferred algorithms as default
- Customizing **shadow**, **midtone**, and **highlight colors** to enable creative grading
- *Color Picker Tools* allow direct manipulation of tonal areas (red shadows)
- Clipping settings adjust how much detail is retained or lost in tonal extremes
- Option to work on **RGB** or **individual R/G/B channels** for finer control

More Levels Professional Tips

- Built-in presets like **Increase Contrast** and **Lighten Shadows** simplify grading

- White, gray, and black point selectors allowing **manual color balance correction**

- Holding **Alt/Option** while adjusting sliders to show **clipped (lost) details**

- Clipping indicators help maintain **image detail integrity** during adjustments

- Sampling a white area with the *White Point Tool* to correct white balance globally

- Using **Alt/Option + Auto** for further adjustment that allows selection of methods like: **Monochromatic Contrast**, **Enhance Per Channel Contrast**, etc.

- Per-channel enhancement improving **individual color channel balance**

- Enabling creation of **color styles** (cool shadows, warm highlights)

Advanced Use of Curves in Photoshop

- Curves allow targeted adjustment of shadows (left) and highlights (right) via the tone curve

- Holding **Alt (Option)** while adjusting sliders to reveal **clipping warnings**, helping preserve details

- Photoshop offers **auto-enhancement options** under **Alt/Option + Auto**, including per-channel and contrast-based adjustments

- Presets like **Negative**, **Cross Process**, or **Darker** give creative looks; results can be previewed live

- Curves and Levels have similar core functions

- Adjusting individual **RGB channels** enhances color control and tonal balance

- Most curve adjustments follow an **S-curve** or **Z-curve** shape, improving contrast or stylization

Targeted Color Control & Combined Adjustments

- *Targeted Adjustment Tool* (**click & drag** in image) modifies specific tones directly on the image

- Enables precise control over skin tones, highlights, shadows, and color intensity

- White, gray, and black point samplers allow quick **tonal balancing** of the image

- Combining Levels and Curves adjustments enhances both **global tone** and **color accuracy**

- Added **Hue/Saturation layer** allows selection-based saturation changes for subtle refinement

- Visual comparison of before vs after shows significant improvement in **tone** and **warmth**

- Final step involves saving preferred versions and discarding experimental edits

Introduction to Camera Raw – JPEG vs RAW

- **JPEG** images: widely compatible and easy to use; compression and data loss affect image quality

- **RAW** images: unprocessed files taken directly from a camera, retaining full image data

- RAW files significantly larger in size due to preserved details and higher quality

- Zooming into RAW images reveals skin texture and fine details without quality loss

- Clipped highlights in RAW images can often be recovered during editing

- JPEG images lose detail in overexposed or bright regions (whites)

- **Recovery of detail** in JPEGs is limited or impossible due to prior compression

- RAW files allow for precise post-processing flexibility not available in JPEGs

Working with RAW Files in Photoshop

- Opening a RAW file launches the **Camera Raw** module automatically

- Camera Raw is both **a plugin** and **a filter** used to edit RAW and non-RAW image formats

- Adjusting exposure and highlights in Camera Raw can restore hidden image data

- JPEGs processed in Camera Raw show minimal improvement due to lost information

- Camera Raw preserves **camera metadata**, such as original white balance and shooting settings

- White balance options include **As Shot**, **Auto**, and others derived from the camera

- RAW images retain the full fidelity of camera settings for more accurate color correction

Camera Raw – Setup & Basic Tools

- Camera Raw plugin is primarily used for **color correction**, but offers many other editing features

- Accessing *Settings > Workflow* before editing to configure:

  - **Color Space**: Recommended option is *Adobe RGB (1998)* for most tasks
  - **Bit Depth**: Using **16-bit** for greater tonal range and image flexibility

- The **viewport** shows live previews of changes applied to the image

- Essential tools include:

  - *Zoom Tool*: Click-drag or using **Ctrl/Command** + **+/-** to zoom in/out
  - *Pan (Hand) Tool*: Holding **Spacebar + drag** to navigate the zoomed image

- Settings on the **right panel** use sliders to adjust image parameters like:

  - **Exposure**, **Contrast**, **Highlights**, **Shadows**, **Whites**, and **Blacks**

Camera Raw – Adjustments & Clipping Warnings

- Sliders can be **reset individually** by double-clicking on each slider

- Using the **Reset to Default** button to reset **all edits**

- **Clipping warnings** help identify loss of detail in shadows or highlights:

  - **Red overlay**: Highlight clipping; **Blue overlay**: Shadow clipping

  - Enable/disable warnings using top bar icons or shortcuts:

    - **O** - Toggle highlight clipping warning

    - **U** - Toggle shadow clipping warning

- Example: Increasing **blacks** reveals shadow clipping; increasing **exposure** shows highlight clipping

- Visual indicators help balance tonal range and preserve detail in the image

- Frequent use of reset and preview tools aids in **non-destructive editing**

Camera Raw – Editing & Interface Overview

- **Auto Adjustment**: Automatically applies changes; manual control preferred for precision

- **Black & White Option**: Converting image to monochrome while allowing tone/color adjustments

- **HDR Panel**: Used for HDR edits; not available on JPEGs or when using Camera Raw as a filter

- **Edit**: Core adjustment panel

- **Crop**, **Healing**, **Masking**, **Red Eye**, **Snapshot**, **Presets**, **Image Settings**

- **Profile Selection**: Includes Adobe Color, Landscape, Portrait, Vivid; adjusting based on image type

- **Light Adjustments**: Control exposure, contrast, highlights, shadows, whites, and blacks using sliders

Camera Raw – Color & Effects Adjustments

- **Color Panel:**
  - Adjusting **Temperature**, **Tint**, **Vibrance**, and **Saturation**
  - *White Balance Tool* used to click a neutral point for automatic correction
- **Effects Panel:**
  - **Texture:** Enhancing or smooths fine details
  - **Clarity:** Increasing midtone contrast for sharper detail
  - **Dehaze:** Reducing or adds atmospheric haze
  - **Vignette:**
    - Adjusting intensity (white to black edges)
    - Controlling **Midpoint**, **Roundness**, **Feather**, and **Highlights**
  - **Grain:** Modifying **Amount**, **Size**, and **Roughness** to simulate film texture

Camera Raw – Curves & Color Mixer

- **Curves Adjustment**: Modifying brightness and darkness; tonal range control

- **Point vs Parametric Curve**: Point allows manual control of highlights, shadows, etc.; Parametric offers simplified tonal range sliders

- **Channel-Specific Editing**: Adjusting red, green, and blue channels individually for creative effects

- *On-Image Curve Tool*: Direct image manipulation by clicking and dragging to brighten/darken areas

- **Zoom Controls**: Using **Alt/Option** and mouse wheel for zooming while editing

- **Color Mixer – Hue, Saturation, Luminance**: Adjusting specific color ranges like reds, oranges, yellows independently

- **Targeted Color Adjustment**: Manual selection and tuning of particular colors within the image

Color Grading, Cropping & Before/After

- **Color Grading Panel**: Applying tones to midtones, shadows, and highlights for cinematic looks

- **Balance and Blending Options**: Fine-tuning how color tones interact across luminance ranges

- **Detail and Optics Sections**: Sharpening image or applying optical corrections

- **Crop Panel**: Cropping, rotating, or straightening image using adjustable tools

- **Aspect Ratio Lock**: Maintaining fixed crop proportions or freely adjusting dimensions

- **Preset Cropping**: Choosing from predefined aspect ratios like 1:1 or full frame

- **Rotation and Flip Options**: Refining composition using orientation adjustments

- **Before/After Comparison**: Visualizing image edits in split or side-by-side views

Snapshots in Camera Raw

- **Snapshots Function**: Saving different versions or "looks" of an image within the same Camera Raw file

- **Creating Snapshots**: Using the snapshot panel to create and name each version

- **Multiple Variants**: Different color grading, black and white edits, or any adjustments can each be saved as separate snapshots

- **Persistent Saves**: All snapshots remain embedded in the image file even after closing and reopening

- **Editing Flexibility**: Switching between snapshots for comparison or further modification

- **Export Capability**: Choosing any snapshot version for final export or additional editing

- **Efficient Workflow**: Non-destructive experimentation without losing progress

Healing Tools in Camera Raw

- *Healing Tool* **Purpose**: Removing small blemishes or imperfections; similar to Photoshop's healing brush

- **Zoom and Brush Adjustments**: Zooming in and reducing brush size for precise corrections

- **Tools** include *Healing, Content-Aware Remove*, and *Clone Tools* for varied repair needs

- **Visualizing Edits**: Pressing **V**/toggling visibility checkbox to view affected areas

- **Adjustment Controls**: Modifying brush size, feathering, and opacity for better blending

- **Reset and Refresh**: Using the reset button or refresh for alternative correction overlays

- **Usage Limitation**: Effective for small blemishes, not for large area corrections

Masking in Camera Raw

- **Masking Purpose**: Applying adjustments to specific image parts non-destructively

- **Basic Tools**: Include Subject, Sky, Background, Object, Brush, Linear Gradient, and Radial Gradient

- **Selective Adjustments**: Each mask isolating areas, enabling focused edits like exposure or color change

- **Add/Subtract Masks**: Masks can be combined or refined by adding or subtracting selections

- **AI-Assisted Masking**: The **People** tool uses AI to isolate body parts like lips, skin, hair, and more

- **Mask Preview**: Toggling overlay visibility to check masked areas before applying edits

Mask Refinement, Smart Objects & Red Eye Tool

- **Smart Object Export**: Opening image as a smart object to retain Camera Raw settings and enable future edits

- **Flat Image Export**: Opening image as a regular rasterized file with non-reversible changes

- **Snapshot Integration**: After masking, previously saved snapshots can be recalled for version control

- **Red Eye Tool**: Removing red eye defects by clicking on the affected area

- **Red Eye Settings**: Modifying pupil size and darkness for optimal correction

- **Non-Destructive Workflow**: Combining masks, snapshots, and smart object export to preserve editing flexibility

- **Finalizing Adjustments**: Confirming edits through the **Edit** panel to return to Photoshop's main interface

Exercise 3

- Open a RAW image in Camera Raw and set Color Space to *Adobe RGB (1998)* and Depth to *16-bit* for better color fidelity

- Use *White Balance Tool* to sample a neutral point and correct temperature/tint

- Adjust Exposure, Contrast, Highlights, Shadows, Whites, and Blacks to improve tonal range

- Increase Vibrance slightly; avoid strong saturation at this stage

- Apply Curves Adjustment for targeted tonal correction

- Use Color Mixer or *Targeted Tool* to fine-tune specific color ranges

- In Effects, boost Texture and Clarity for sharper details (beard); apply light Dehaze and subtle Vignette

- Use Color Grading: add blue tones to Shadows, leave Highlights neutral; set Blending ~50%, adjust Balance slightly for cooler mood

Exercise 3

- Add Lens Distortion subtly for stylistic effect

- Use *Straighten Tool* within Crop Panel to level the subject's posture

- Healing Step later in Photoshop, not in Camera Raw

- Apply Gradient Mask to brighten dark side of face with minor Shadow and Exposure increase

- Used Brush Mask on neck area to subtly lift shadow brightness and reveal detail

- Constantly use Before/After Toggle & Side-by-Side Preview to assess subtle enhancements and ensure natural look

- Export to Photoshop as Smart Object to preserve flexibility

- Create a rasterized layer for blemish removal using *Spot Healing Brush Tool*

- Remove minor blemishes, preserving features like birthmarks for authenticity

Exercise 3

- Duplicate Layers to prepare for frequency separation (not dodging/burning); organize into groups

- On lower layer, apply Gaussian Blur (around 7.2) to remove high-frequency detail but preserve facial structure

- On upper layer, use Apply Image with:
  - Blending: Add, Scale: 2, Invert: On (for 16-bit images)
  - Targeted Copy to Layer and RGB channel for accurate texture mapping

- Set upper layer to Linear Light blending mode and group both layers as Frequency Separation group

- Use *Mixer Brush Tool* on blurred layer:
  - Settings: Wet 9%, Load 75%, Mix 90%, Flow 100%, *Sample All Layers: Off*
  - Paint in direction of contours and skin texture

Exercise 3

- Use Zoomed-Out View while blending for natural results; focus on facial contours and under-eye areas

- Create merged layer (**Ctrl/Cmd + Shift + Alt/Option + E**), then add Hue/Saturation Adjustment Layer:

  - Reduce Saturation to -88, then use soft brush mask to selectively desaturate eye redness

- Duplicate Merged Layer (**Ctrl/Cmd + G**) before applying dodging and burning for non-destructive editing

- Start with *Burn Tool*:

  - Target: *Shadows*, Exposure: *~26%*

  - Use minimal strokes to enhance facial contours and deepen select areas

Exercise 3

- Switch to *Dodge Tool*:

  - Target: *Highlights*, Exposure: *~10%*

  - Apply on areas needing light emphasis to sculpt facial highlights

- Carefully toggle before/after views to assess improvements; adjust opacity for a natural finish

- Apply Color Lookup Adjustment Layer for creative color grading:

  - Browse LUTs using to find a faded tone that matches the portrait mood

- Experiment with Blending Modes (*Color, Luminosity, Hue*) to test subtle effects

- Invert the adjustment mask (Ctrl/Cmd + I) and selectively paint on subject to localize the effect

- Make final before/after comparisons; fine-tune opacity for balance and realism

- Save final versions in both PSD and JPEG formats

Color Grading Transfer – Sampling & Preparing

- Opening the edited image from the previous session and applying an exposure adjustment layer

- Slightly increasing brightness for a better base look before saving image as JPEG

- Opening the target image (from which the color grading will be copied)

- Loading the edited image into the same workspace as a second layer

- Using the *Rectangular Marquee Tool* to select a representative area of skin from the reference image

- Duplicating the selection and moving it onto the target image (*Move Tool*)

- Using the *Eyedropper Tool* to sample three tone zones: highlights, midtones, shadows

- Using the *Brush Tool* to place each sampled tone onto the reference image for later use in color matching

Color Grading Transfer – Transferring & Adjusting

- Adding a Curves Adjustment Layer to the target image and ensuring the curves icon (not the mask) is selected

- Double-clicking the White Point Eyedropper and assign the sampled highlight color from the reference

- Repeating for Gray Point and Black Point using midtone and shadow samples

- Clicking on the corresponding highlight, midtone, and shadow areas on the target image to apply the sampled tones

- Fine-tuning the curves to adjust contrast or improve visual appeal if needed

- Masking out the eye regions using a soft brush to preserve natural whiteness

- Adding optional second Curves layer for minor contrast or exposure refinements

- Toggling visibility of adjustment layers to compare the before-and-after color grading effect

Adding Color to Black & White Images

- Colorizing black and white images requires a reference photo with similar lighting and skin tones

- The reference image helps replicate realistic color values in the target image

- Both images should be opened in Photoshop for side-by-side comparison

- Dragging the reference image onto the black and white image canvas

- Creating a color palette using sampled highlights, midtones, and shadows

- Using the elliptical marquee tool to select representative areas for each tone

- Averaging each selected area using the *Filter > Blur > Average* command

- This method simplifies complex tone areas into single representative colors

Creating & Applying Gradient Map

- Creating a new layer to build the color palette from sampled tone areas

- Using *Eyedropper Tool* and *Brush Tool* to sample and apply colors to palette

- Sampling highlights, midtones, and shadows from the averaged reference areas

- Hiding the reference image to focus on coloring the target image

- A Gradient Map adjustment layer is added and placed below the palette

- Mapping gradient colors: shadow for dark, midtone for mid, highlight for light

- The gradient map must be selected directly (not the mask) to enable color sampling

- Changing blending mode of the gradient map to **Color** to apply tones effectively

Painting & Blending Skin Tones

- Selecting the layer mask and inverting it (**Ctrl/Cmd + I**) to hide the effect

- Using the *Brush Tool* with soft hardness and moderate size to manually reveal skin tones

- Adjusting brush flow or opacity depending on desired subtlety or image requirements

- Avoiding specific areas like lips and hair for targeted color treatment later

- Using **X** key to toggle brush between paint and erase while refining edges

- Applying blending adjustments via the **Blend If** options in Layer Styles to refine tone transitions

- Adjusting dark and bright sliders to ensure color blends naturally with underlying skin tones

- Reducing opacity of the gradient map layer for more balanced color appearance

Enhancing Hair, Clothes & Lips

- Adding a Hue/Saturation adjustment layer; activating **Colorize** to apply tone

- Inverting the mask (**Ctrl/Cmd + I**) and painting selectively over hair or clothing to reveal color

- Using low-opacity brushes to apply subtle tones and simulate realistic highlights

- Trying different blend modes like **Color** to improve tone integration

- Applying color to clothing areas using the same layer and method for consistency

- For lips, creating a new layer, using a red tone with low flow (25%) and carefully paint

- Setting lip color layer blending mode to Color and fine-tuning opacity

- Final refinements include subtle blending (using **Alt/Option + Drag**) and hiding unused layers

Questions & Answers Homework