BOHAN WANG

PORTFOLIO

ECSE 544

IMAGE USED


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SUD
Fréquente en pointe AM
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Horaires
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SMS : 52786
CODE D'ARRÊT
52608


POP Corn


POST BOX

DEVICE: DJI POCKET 3
LENS: 20 MM
APERTURE: F/2.0
ISO: UNKNOW

CAMERA: CANON EOS M50
LENS: CANON EF-M 22MM F/2 STM
APERTURE: F/2.0
ISO: 800

CAMERA: CANON EOS M50
LENS: CANON EF-M 22MM F/2 STM
APERTURE: F/5.6
ISO: UNKNOW

DEVICE: IPHONE 14 PRO
LENS:48MP-MAIN-24MM,
APERTURE:F/1.78
ISO: UNKNOW

Reference: https://support.apple.com/en-ca/111849

ENHANCEMENT 1

Key steps include:

- **Gaussian blur** to reduce noise.
- **Contrast, brightness, and saturation** adjustments to enrich image tones.
- Custom tonal curve (**S-curve**) for subtle color grading and midtone contrast.
- **Sharpening** to restore clarity after smoothing.

Reference: https://github.com/sjmoran/curl-image-enhancement/blob/master/model.py?utm_source=chatgpt.com

Original:

Original:

Original:

Enhanced:

Enhanced:

Enhanced:

DESCRIPTION

metrics adjustments applies automated color and contrast correction using a combination of Gaussian smoothing and tonal curve mapping, color vibrancy is improved by adjusting saturation and applying a custom S-curve to midtones, deepening shadows and enriching highlights, sharpness enhancement is applied at the end to restore edge clarity after smoothing and grading.

AESTHETIC QUALITY

The enhanced images transform from flat and muted to bold and cinematic, exhibiting richer colors, stronger contrast, and heightened visual depth while preserving the original scene content.

ENHANCEMENT 2

Key Steps Include:

- **Grey World white balancing** to correct overall color cast by equalizing average channel intensities.
- **Bilateral filtering** to smooth textures while preserving edges and details.
- **Tilt-shift** effect using Gaussian blur and mask blending to simulate depth of field with focus on the central region.

Reference: https://github.com/anlcnydn/bilateral

Original:

Original:

Original:

Enhanced:

Enhanced:

Enhanced:

DESCRIPTION

This processing pipeline combines automated color correction, edge-preserving smoothing, and simulated depth-of-field effects. White balancing adjusts color channels based on Grey World assumptions, while bilateral filtering enhances clarity without blurring important details. The tilt-shift effect mimics miniature-style focus by softly blurring the top and bottom regions, drawing attention to the center of the image.

AESTHETIC QUALITY

The enhanced images exhibit more natural and balanced color tones, smoother transitions, and a soft vignette effect that guides visual focus. The result is a clean, subtly stylized image that feels both realistic and artistically composed.

ENHANCEMENT 3

Key Steps Include:

- **Color inversion** applied to each RGB channel, transforming the image into its photographic negative.
- **Depth map** generation using grayscale thresholding to distinguish between foreground and background regions.
- **Bokeh simulation** via a custom hexagonal kernel that creates a soft blur on the background.
- **Foreground-background** blending combines sharp details with a stylized blurred effect, enhancing spatial perception.

Original:

Original:

Original:

Enhanced:

Enhanced:

Enhanced:

DESCRIPTION

This technique fuses creative color transformation with depth-aware blurring to produce visually striking results. The image is first converted into a negative through pixel-wise inversion, then a synthetic depth map is derived from brightness levels to identify focal areas. A custom hexagonal kernel is used to mimic bokeh blur, typically seen in photography with shallow depth of field. The sharp foreground and blurred background are then blended based on the depth map, simulating a stylized focus effect.

AESTHETIC QUALITY

The enhanced images exhibit a surreal, dream-like quality characterized by high contrast, inverted hues, and soft, bloom-like backgrounds. This process turns ordinary scenes into abstract, high-impact visuals that resemble conceptual digital art or experimental photography.

ENHANCEMENT 4

Key Steps Include:

• Image preprocessing using resizing, tensor conversion, and normalization for model compatibility.

• Cartoonization using a pre-trained **AnimeGANv2** model that transforms photo-realistic images into stylized cartoon versions.

• Post-processing including denormalization and resizing to restore original resolution and save the final result.

AnimeGANv2 reference: https://github.com/bryandlee/animegan2-pytorch

Original:

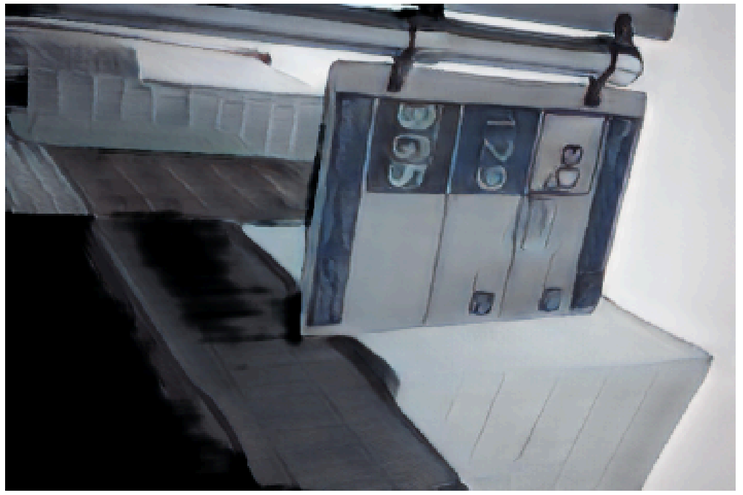
Original:

Original:

Enhanced:

Enhanced:

Enhanced:



DESCRIPTION

This pipeline uses a pre-trained AnimeGANv2 model to apply real-time photo-to-cartoon translation. The model, sourced from github, maps photorealistic textures into smooth, painterly representations with simplified edges and stylized shading. The optional cartoon_strength parameter allows for fine control over the intensity of the effect by blending the generated cartoon with the original input.

AESTHETIC QUALITY

The resulting images adopt a soft, animated appearance reminiscent of hand-painted illustrations, with smoothed surfaces, pronounced edges, and artistic abstraction. This transformation gives the original photos a whimsical and stylized look while preserving structural layout and visual storytelling.

ENHANCEMENT 1

Key Steps Include:

- **CycleGAN**-style domain translation to simulate stylistic shifts (e.g., day to night, photo to painting).
- **Bilateral filtering** to smooth the image while preserving edges and key structures.
- **Color grading** using custom lookup tables (LUTs) to apply distinct tones such as cool, warm, film, or vintage aesthetics.

CycleGAN Reference:https://github.com/junyanz/pytorch-CycleGAN-and-pix2pix?tab=readme-ov-file
Bilateral FilteringReference: https://github.com/anlcnydn/bilateral

Original:

Original:

Original:

Enhanced:

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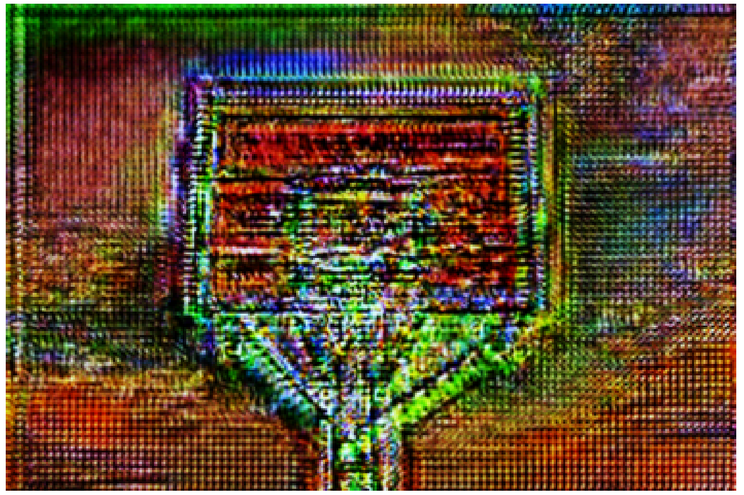
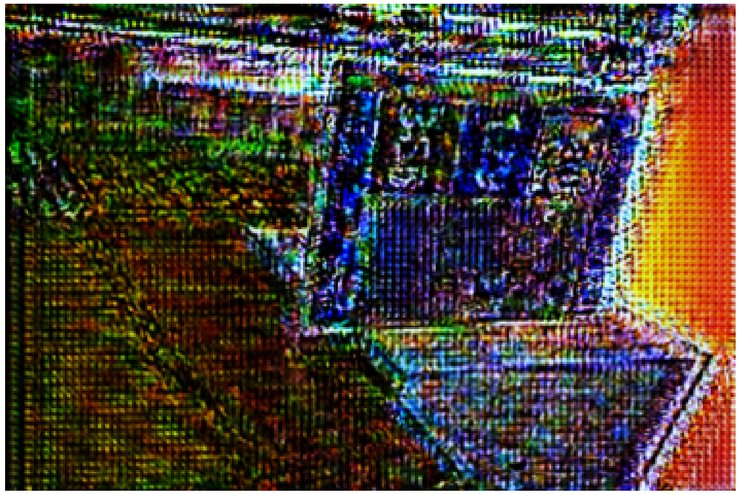


Enhanced:



DESCRIPTION

This pipeline combines domain-style transformation, edge-aware smoothing, and aesthetic color mapping to generate stylized outputs. The process begins with a CycleGAN-inspired transformation (or a simulated placeholder if no pre-trained model is used), followed by bilateral filtering to retain edge details. Custom LUT-based color grading adds the final tone — for example, applying a cool tint for a night-like ambiance or stylizing the image with filmic contrast. The resulting images are transformed stylistically but retain core structural information.

AESTHETIC QUALITY

While the processed images exhibit bold stylistic shifts, such as heavy texture and altered color distribution, the enhancement can sometimes introduce visual artifacts if not calibrated properly. In this output, the transformation produces strong distortions and unnatural pixel patterns, indicating a potential need for better model fine-tuning or image normalization. When functioning correctly, however, this pipeline is capable of delivering highly artistic, domain-specific renderings that shift the image’s mood and visual narrative.