Nigel Dorian

SCENE CLEANING

The Problem

- We have all taken pictures like this:

The Problem

- Or like this:

The Problem

- Or even like this!

The Solution

- Take multiple images of the same scene
  - If possible use a tripod
  - Fix the exposure and focus – best to use Aperture Priority
- Helps to use an intervalometer if you have one
  - Number of images and interval depends on nature of the crowds
  - The more people/vehicles the more images needed
  - The slower they are moving the longer the interval
- I have found 10-20 images at 5-10 sec intervals to work well

The Solution

- Merge all the images using Adobe Photoshop
  - Create a new file containing all the images of the scene as layers known as a “Stack”
  - Merge these layers into a “Smart Object”
  - Select a Stack Mode option that only retains “Constant” pixels.

Method 1

- Start in Lightroom
  - Import all the images in the usual way (helps to put them in a separate “collection”)
  - Make any development adjustments that you want to the first image
  - Select all the images and then go to Photo > Develop Settings > Sync Settings > Synchronize…
- Go to Photoshop
  - Select all then Photo > Edit in > Open as layers in Photoshop…

Method 2

- Start in Photoshop
  - Select File > Scripts > Load Files into Stack
  - In pop-up window
    - Browse to select all the image files
    - (Optionally) Select "Attempt to Automatically Align Source Images
    - Select "Create Smart Object After Loading Layers"

Either Method

- Continue in Photoshop
- If using Method 1 (starting in Lightroom) then
  - Select > All Layers
  - (Optional) Edit > Auto Align Layers
  - Layer > Smart Objects > Convert to Smart Object
- Select Smart Object Layer then
  - Layer > Smart Object > Stack Mode > Median

Demonstration

- Method 1
  - Windsor 3
  - On a tripod but slightly skewed
  - Images need adjusting and cropping

Stack Mode	Result	Comments
Entropy	entropy = - sum((probability of value) * log2(probability of value))	The binary entropy (or zero order entropy) defines a lower bound on how many bits would be necessary to losslessly encode the information in a set.
Kurtosis	kurtosis = (sum((value - mean)^4) over non-transparent pixels) / ((number of non-transparent pixels - 1) * (standard deviation)^4).	A measure of peakedness or flatness compared to a normal distribution.
Maximum	The maximum channel values for all non-transparent pixels	
Mean	The mean channel values for all non-transparent pixels	Effective for noise reduction
Median	The median channel values for all non-transparent pixels	Effective for noise reduction and **removal of unwanted content from the image**
Minimum	The minimum channel values for all non-transparent pixels	
Range	Maximum minus the minimum of the non-transparent pixel values	
Skewness	skewness = (sum((value - mean)^3) over non-transparent pixels) / ((number of non-transparent pixels - 1) * (standard deviation)^3)	Skewness is a measure of symmetry or asymmetry around the statistical mean
Standard Deviation	standard deviation = Square Root(variance)	
Summation	The sum channel values for all non-transparent pixels	
Variance	variance = (sum((value-mean)^2) over non-transparent pixels) / (number of non-transparent pixels - 1)	

Luminance	Stack Mode	
50	median	50
45	mean	40.55
50	maximum	75
1	minimum	1
50	range	74
75	standard deviation	20.96
50	variance	439.52
50	kurtosis	0.51
45		
1		
50		
50		
50		
45		
3		
50		
50		
45		
1		
50		

Demonstration

- Method 2
  - Paddington Station 2
  - Not able to use a tripod
  - Images not aligned

Examples

Westminster Cathedral

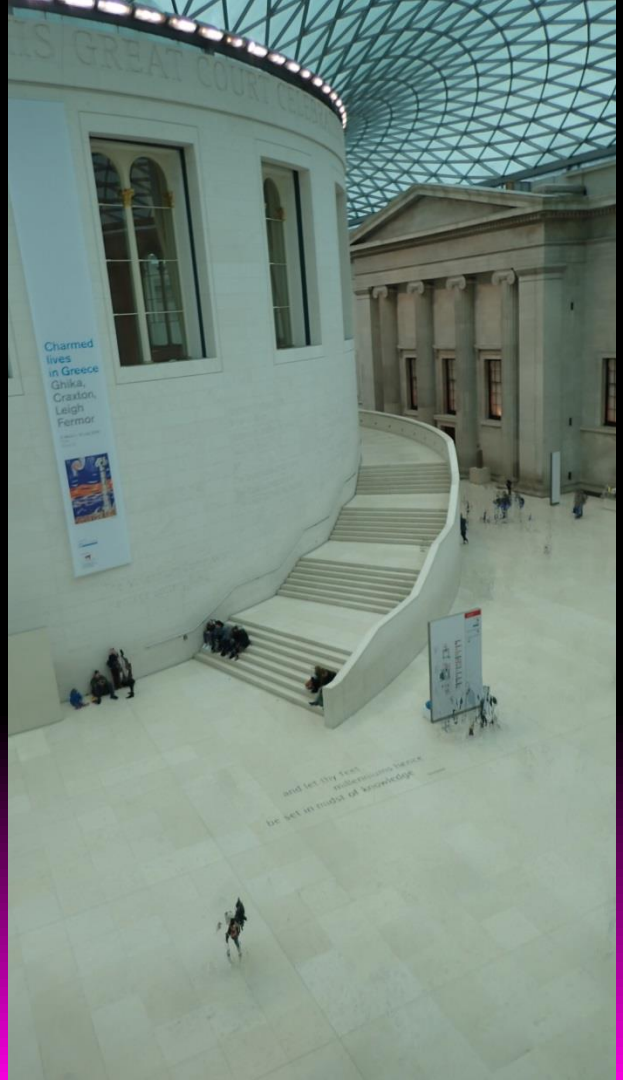
Wellington Arch

British Museum

Paddington Station

Windsor Castle


DOMINE JESU REX ET REDEMPTOR
PER SANCTI NOMEN TUUM SALVA NOS


Charmed lives in Greece
Ghika, Craxton, Leigh Fermor

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