Tool Demonstration and Hands-on Exploration

Getting Started...

- **Sign on** to WIFI:
  WIFI name: **FAMGuest**
  Password: **Norcross1**

- Go to the website in your packet (w#.waivs.org/wings-portal).

- Click **Login**:
  Username: **fsuvs**
  Password: **FSUvs2016**

- Select **Run Workflows** from the top menu.

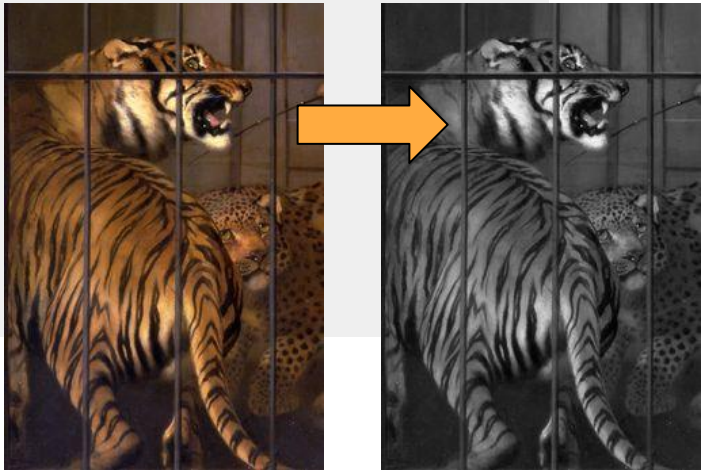
Intro: ToGrayscale & Uploading Pictures

Task 1:

Use the **ToGrayscale *workflow*** to turn *Landseer's Tiger* from **Color** to **Grayscale**.

Task 2:

Upload this picture to the system.



Experiment 1: Using **Stylized Images** & **Entropy**

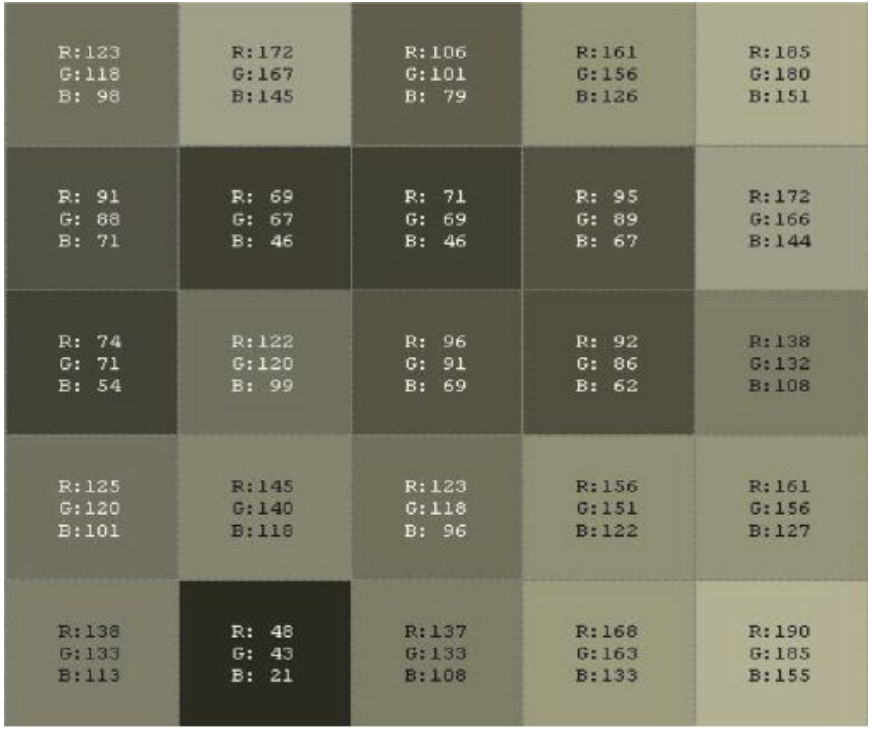
Starry, Starry Night by Van Gogh, 1889
La noche estrellada por Van Gogh, 1889

Ibis with Basket by Shelley Reed, 2011
Ibis con cesta por Shelley Reed, 2011

StylizedImage Output
El Resultado de la *ImagenEstilizada*

Pixel Analysis (Entropy)

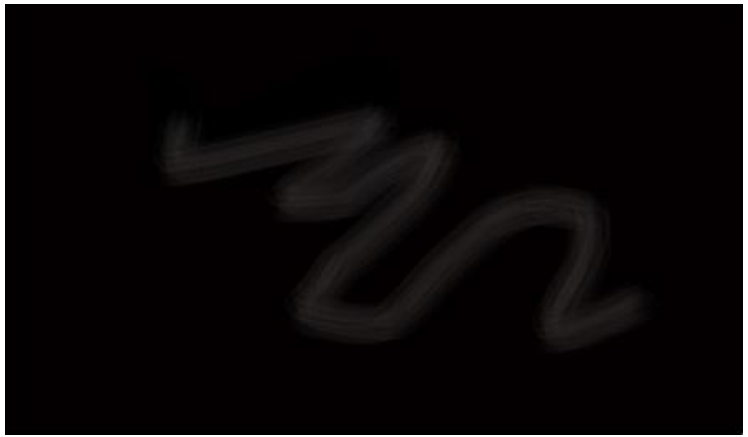
R:67 G:47 B:40	R:67 G:50 B:43	R:68 G:53 B:50	R:68 G:52 B:52	R:70 G:54 B:54
R:76 G:55 B:50	R:71 G:53 B:49	R:72 G:54 B:50	R:72 G:54 B:52	R:71 G:53 B:51
R:76 G:57 B:53	R:72 G:53 B:49	R:73 G:54 B:50	R:75 G:56 B:52	R:72 G:52 B:51
R:77 G:58 B:54	R:69 G:50 B:44	R:71 G:50 B:45	R:69 G:48 B:45	R:78 G:57 B:54
R:77 G:58 B:52	R:78 G:57 B:52	R:79 G:58 B:53	R:81 G:60 B:57	R:75 G:56 B:52



Experiment 1: Using **Stylized Images** & **Entropy**

Entropy measures how different the other pixels are in the area around a pixel. In mathematical terms, it is a way to measure information contained in a painting as a measure of uncertainty. Or very mathematical terms, $\sum p \log_2(1/p)$.

0.652825109051



Buell's Divergence

5.40867630854

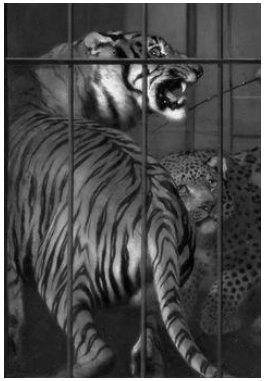
Pollock's Convergence

Landseer's Tiger
(grayscale image)

Task 1:
Apply **Landseer-style**
to **Reed's Tiger**

Task 2:
Apply **Reed-style**
to **Landseer's Tiger**

Reed's Tiger



Landseer
(→ Reed)

Reed
(→ Landseer)

Entropy Images & Entropy Values

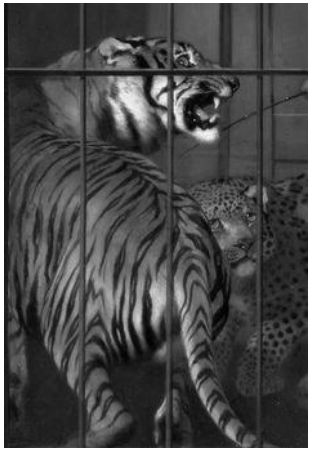
Task 1:

Compare Entropy Images (**GetEntropyImage**) for the two transformed paintings.

Reeds style on *Landseer.png* and Landseer style on *Reed.png*

Task 2:

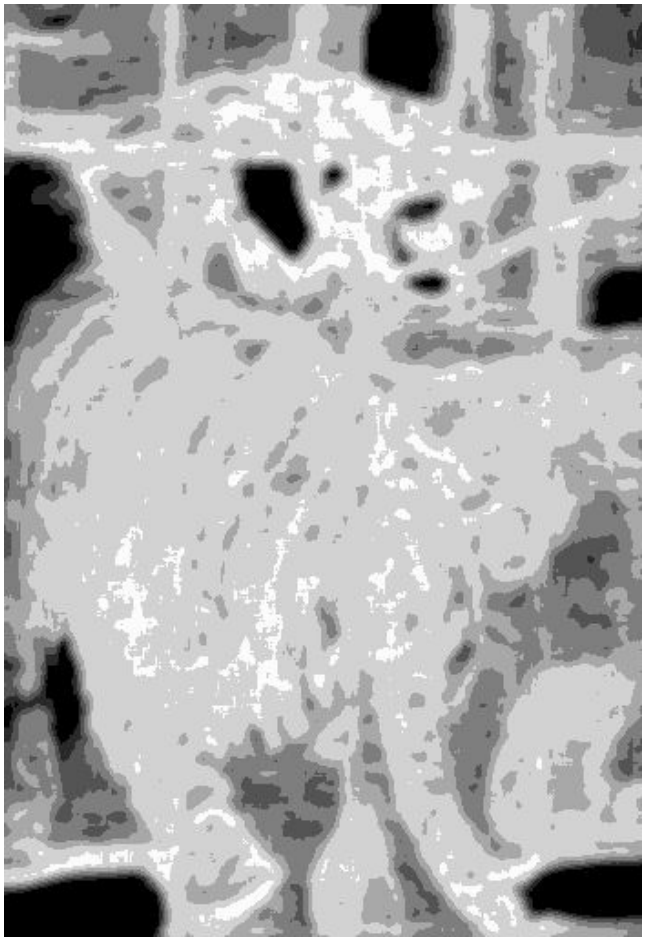
Compute Entropy Values for the images.



Landseer

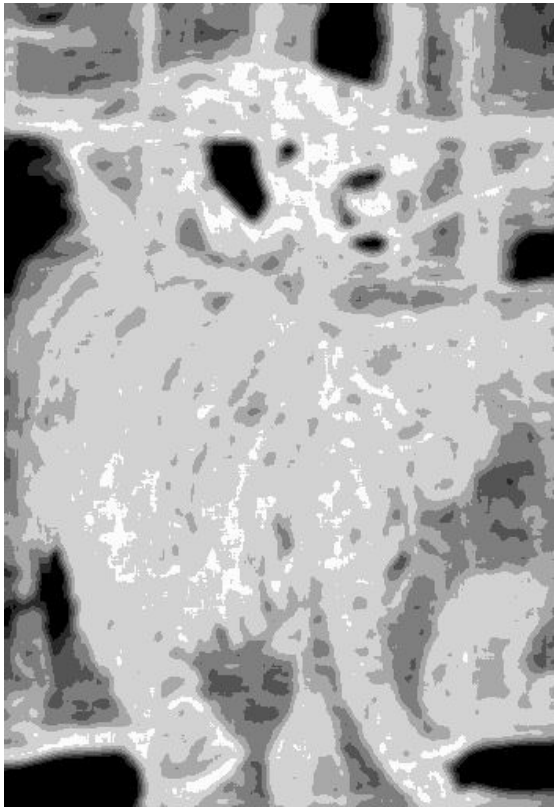
Reed

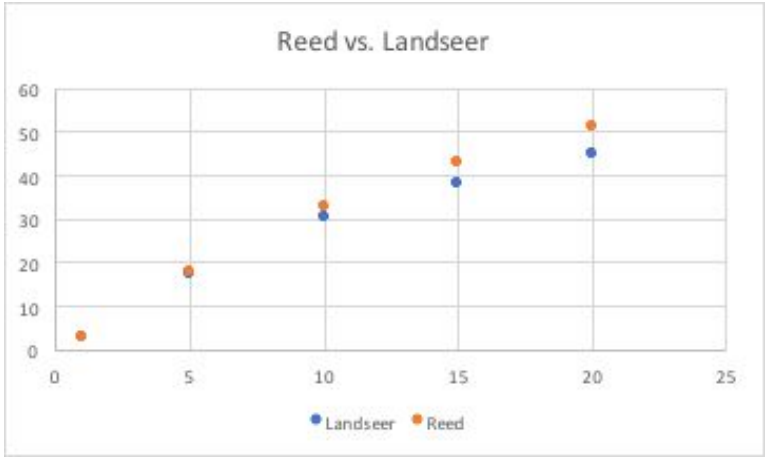
Landseer's Style on Reed

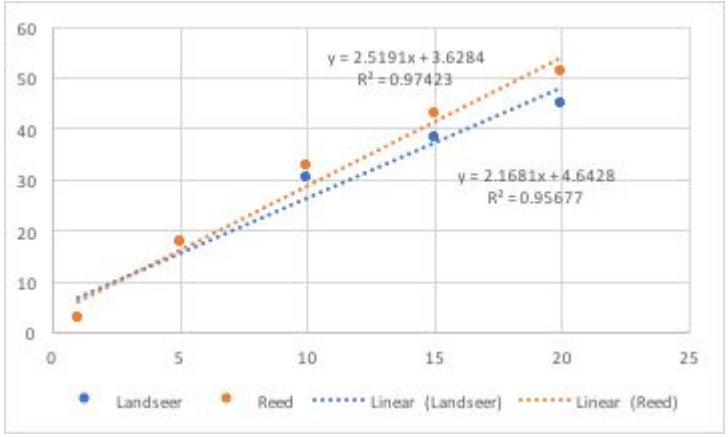


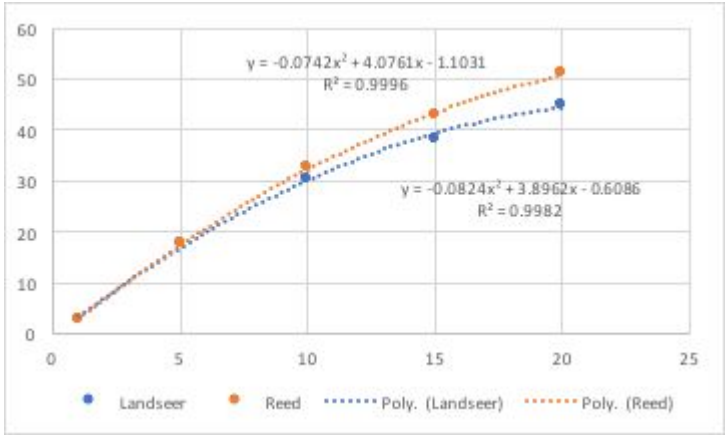
Reed's Style on Landseer

Compute Entropy Values for 1 and 5




Reed vs. Landseer
60
50
40
30
20
10
0
0
5
10
15
20
25
Landseer
Reed

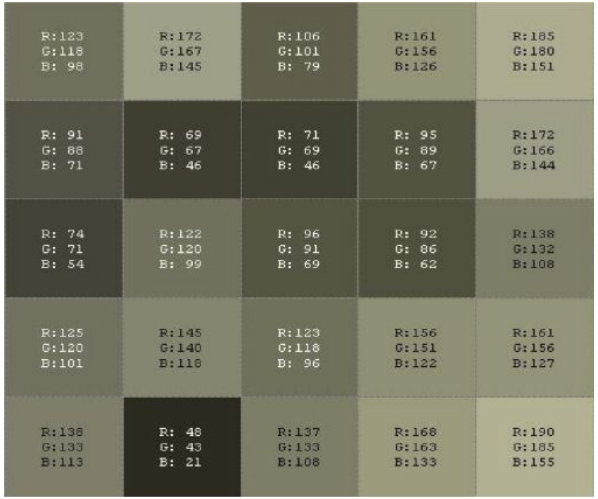

y = 2.5191x + 3.6284
R² = 0.97423
y = 2.1681x + 4.6428
R² = 0.95677
60
50
40
30
20
10
0
0
5
10
15
20
25
Landseer
Reed
Linear (Landseer)
Linear (Reed)

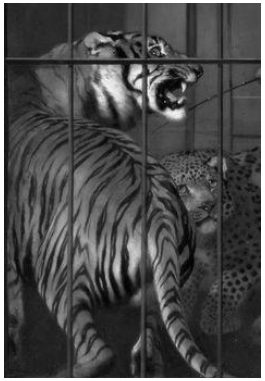

y = -0.0742x² + 4.0761x - 1.1031
R² = 0.9996
y = -0.0824x² + 3.8962x - 0.6086
R² = 0.9982
60
50
40
30
20
10
0
0
5
10
15
20
25
Landseer
Reed
Poly. (Landseer)
Poly. (Reed)

Pixel Analysis (Discrete Tonal Measures)

DTM measures the differences between pixel values in a neighborhood. More formally, it measures the **standard deviation** (measure of variation) between the pixel values. Or more mathematically speaking, $\sum(\sqrt{(x-m)^2/(n-1)})$.

R:67 G:47 B:40	R:67 G:50 B:43	R:68 G:53 B:50	R:68 G:52 B:52	R:70 G:54 B:54
R:76 G:55 B:50	R:71 G:53 B:49	R:72 G:54 B:50	R:72 G:54 B:52	R:71 G:53 B:51
R:76 G:57 B:53	R:72 G:53 B:49	R:73 G:54 B:50	R:75 G:56 B:52	R:72 G:52 B:51
R:77 G:58 B:54	R:69 G:50 B:44	R:71 G:50 B:45	R:69 G:48 B:45	R:78 G:57 B:54
R:77 G:58 B:52	R:78 G:57 B:52	R:79 G:58 B:53	R:81 G:60 B:57	R:75 G:56 B:52





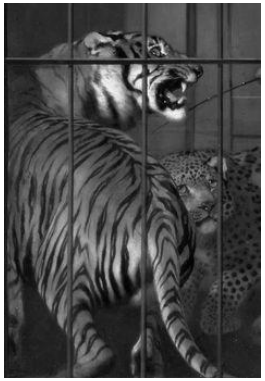
Landseer

Reed's Tiger

Landseer's Tiger

Reed

DTM Images



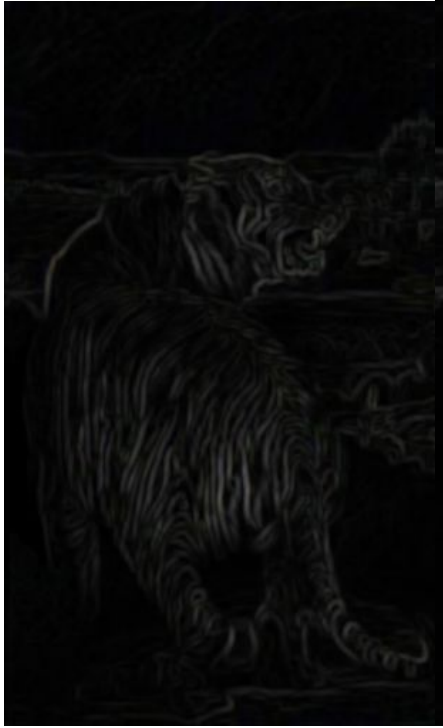
Landseer

Landseer's Style on Reed's Tiger

Reed's Style on Landseer's Tiger

Reed

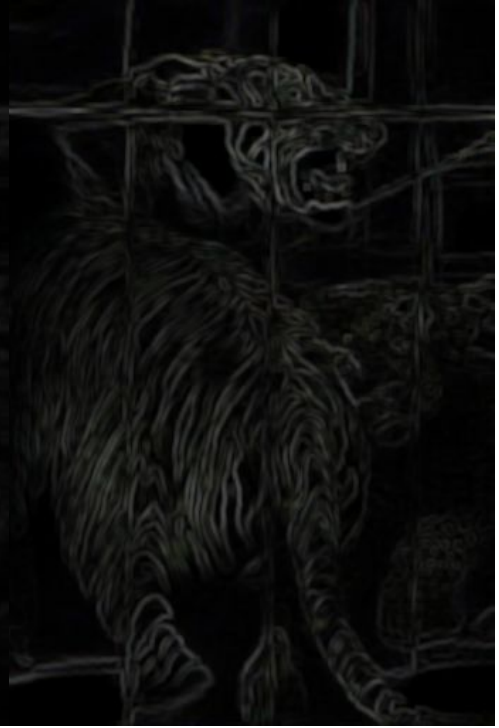
DTM Images



Landseer's Style
on Reed's Tiger

Reed's Tiger

Landseer's Tiger



Reed's Style
on Landseer's Tiger

Experiment 2: Using **Stylized Images** & **Entropy**

Experiment 2: Pilot Data

Impressionist/Hudson River

DTM Value Classification

Task 1:

Compute DTM Values (neighborhood 5) for

- Two Monet
- Two Sisley
- Two Renoir
- Two Bierstadt
- Two Cole
- Two Church

Task 2:

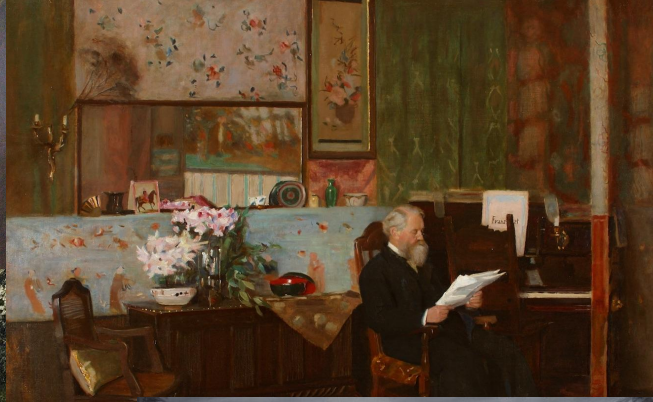
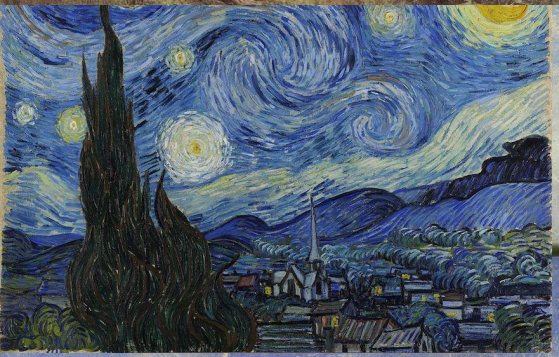
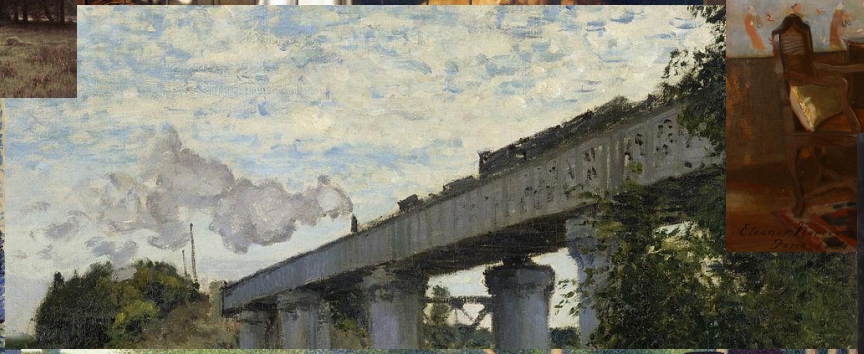
Conjecture whether this is possibly a good classifier.

Your turn.

You now have a very *particular* set of *skills*, *skills* you have acquired over a very short time...

Choose from the current collection….




So many options…
...or upload pictures of your own.

We suggest you make the longer side no more than 500 pixels.