



# Creative Coding

Image Processing

COD 207 - Week 07 Class →

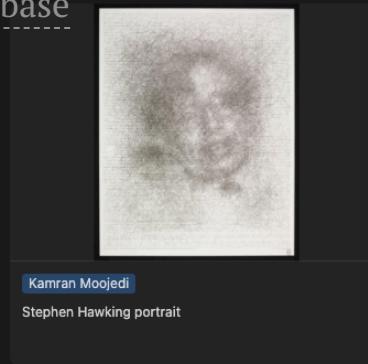


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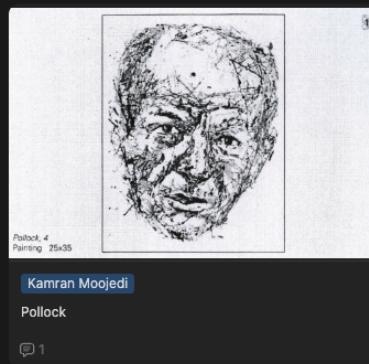
# Algorithmic Art: Image Processing

link to ALAP Database



Kamran Moojedi

Stephen Hawking portrait



Kamran Moojedi

Pollock

1



Meelan Leong

Parrot With Duck in Landscape



Mutsuko Sasaki

Hello Sunflowers



Virginia Hines

Leaves & Birds & Sun Design



Diana Wong

Penguins, Just For Fun

# Example: Basics

Load the image, replace the pixel data with shapes



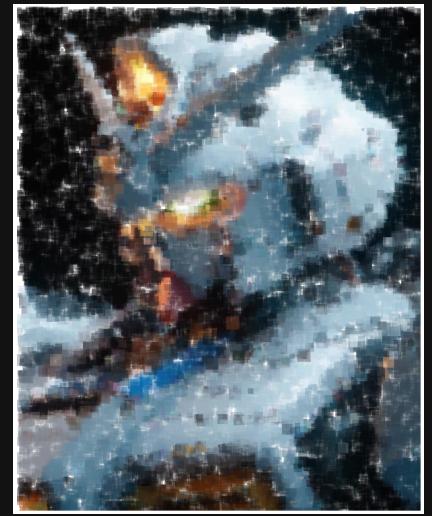
1. Load image



2. Swap pixels with  
circle()



3. Increase the circle()  
using random(min, max)



4. Swap pixels with rect()  
using random(min, max)

link to source code

# Example: Paint with custom brush

Load the image, replace the pixel data with another image.



Load image

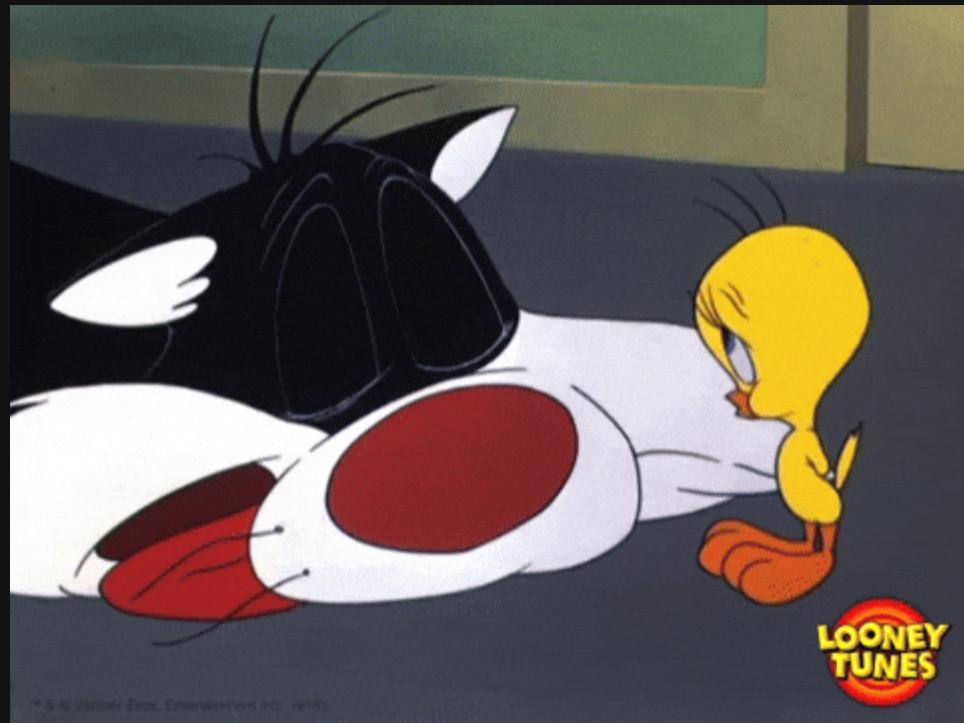


Create a brush in Photoshop in pure white color



Replace pixels with the brush image. Use `tint()` to set color

link to source code 



# BREAK

10 mins.

# Case Studies Inspiration

Following examples are developed using p5JS editor.

[Pixelate the image](#)

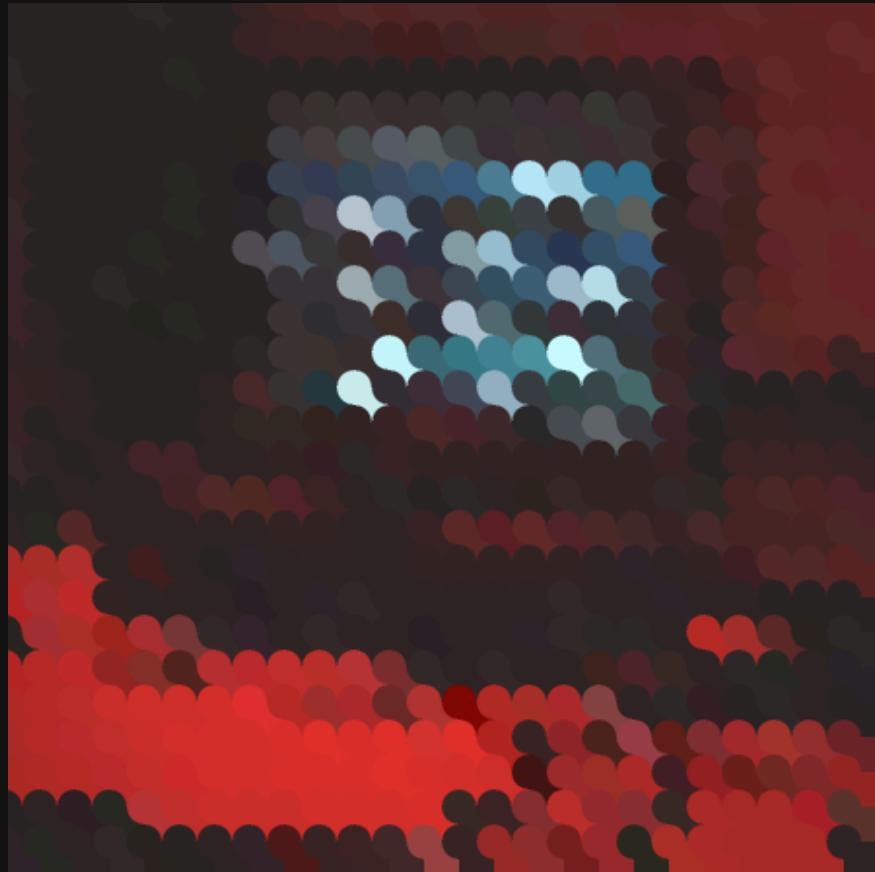
[Mosaic Like Image](#)

[Diagonally mirrored image](#)

[Image Processing 1](#)

[Image Processing 2](#)

[Use Image as Texture](#)



# Add Interactivity

# Built-in Functions: Keyboard

```
1  function setup() {  
2      // Creates the application window params: width=600, height=600  
3      createCanvas(600, 600);  
4  
5  }  
6  
7  function draw() {  
8      // Set the background color of the window params: Red: 100, Green: 20, Blue: 20  
9      // R,G,B values must be between 0 - 255  
10     background(100,20,20);  
11  }  
12  
13 // key is built-in variable. You don't need to declare on top of your code.  
14 function keyPressed() {  
15     if(key == 'r') {  
16         // set the background to a random color  
17     }  
18 }
```

# Built-in Functions: Mouse

```
function setup() {  
  // Creates the application window params: width=600, height=600  
  createCanvas(600, 600);  
  ^  
}  
  
function draw() {  
  // Set the background color of the window params: Red: 100, Green: 20, Blue: 20  
  // R,G,B values must be between 0 - 255  
  background(100,20,20);  
  circle(width/2,height/2,300);  
}  
  
// this function will be triggered whenever the user clicks on mouse or touchpad  
function mousePressed() {  
  // Increase the size of the circle whenever the user clicks on mouse or touchpad  
}
```

# Download The CheatSheet

Cheatsheets / Learn p5.js



## Interaction

### mouseX and mouseY

The `mouseX` and `mouseY` variables always store the current x and y coordinates of the mouse relative to the origin of the canvas. So if the mouse was currently at the x position of 150 pixels and the y position of 200 pixels, the value of the `mouseX` variable would be 150 and the value of the `mouseY` variable would be 200.

### The `mouseIsPressed` Variable

`mouseIsPressed` is a built-in boolean variable that is `true` when the mouse button is pressed, and `false` when it is not pressed. The `mouseIsPressed` variable is commonly used in `if` statements to perform actions based on whether the mouse button has been pressed or not.

```
function draw() {  
    // The ellipse's x and y positions  
    // follow the mouse  
    ellipse(mouseX, mouseY, 100, 100);  
}
```

```
// Draws ellipse if mouse is pressed  
if (mouseIsPressed) {  
    ellipse(200, 200, 180, 180);  
}
```

Download The CheatSheet

# Assignments

1. Choose a portrait image of someone (E.g super hero, philosopher, artist/actrist, any real or imagery individual)
2. Review the code templates in the presentation as a source of inspiration.
3. Create an image processing work.
4. Implement your design in p5JS and randomize the a parameter whenever the user pressed r key on keyboard.

PTS

5. Submit 3 different variations of your sketch as jpg. Do not submit 3 different code. PTS
6. Submit the openprocessing link. PTS
7. Submit the sketch source code as zip file as well. PTS

DO NOT