

celesture

: Celestial+ Gesture

Making your own planets by gesture

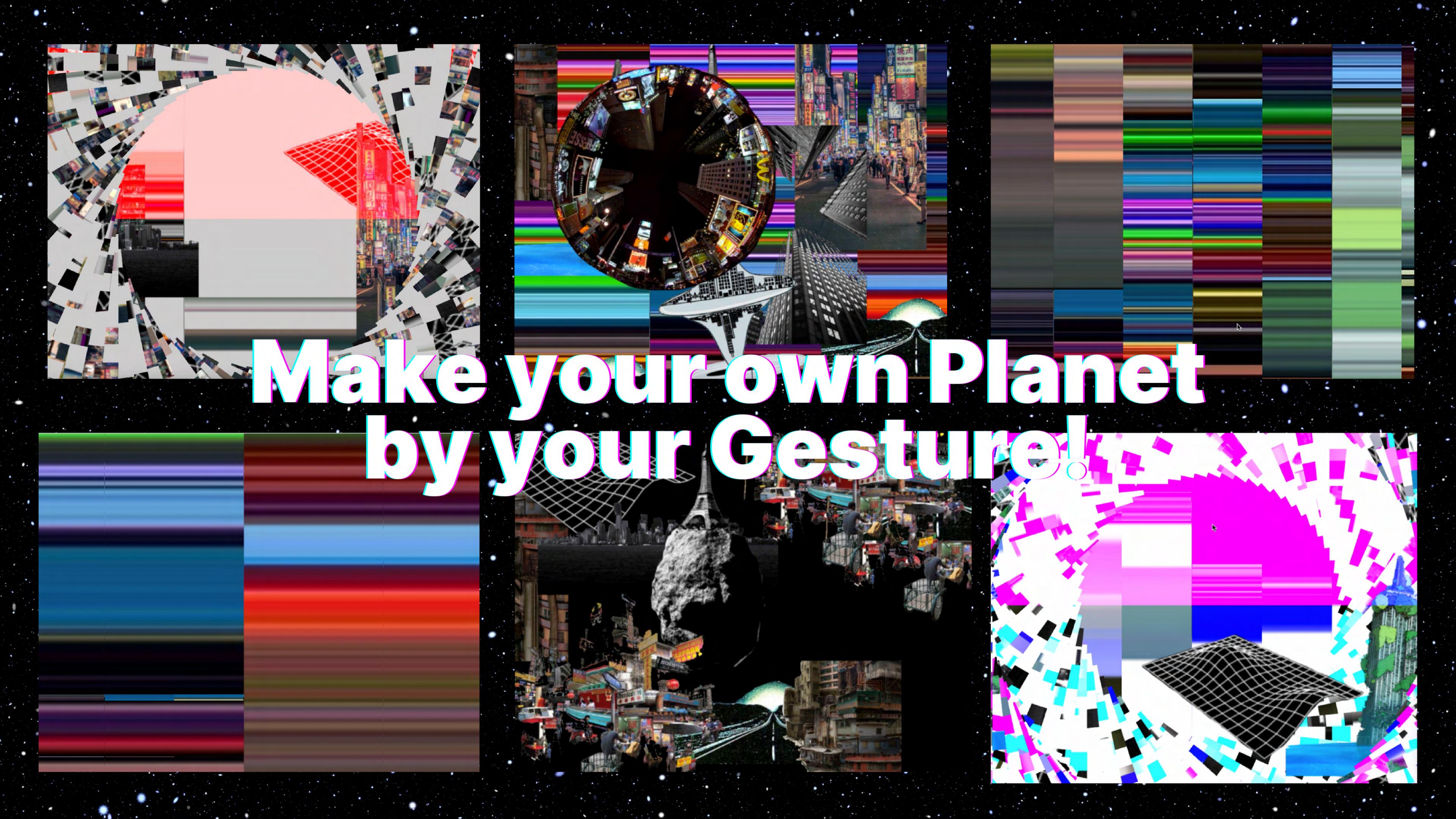


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Motivation

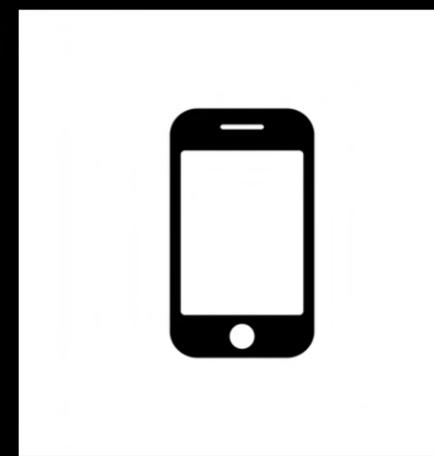
Let's be the creator of the universe!
You can make a planet's texture with your own hands.

You can create the texture of the planet
through gestures such as turning, lifting, and stirring your phone.



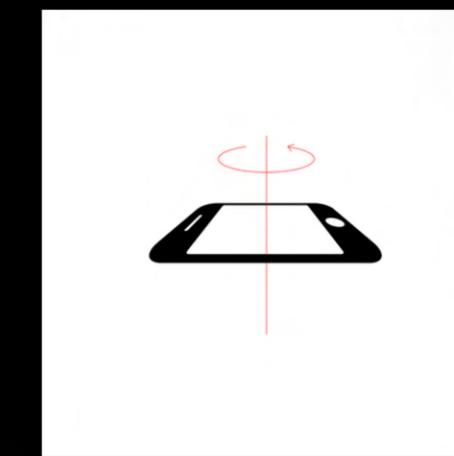
Make your own Planet
by your Gesture!

5 Gesture



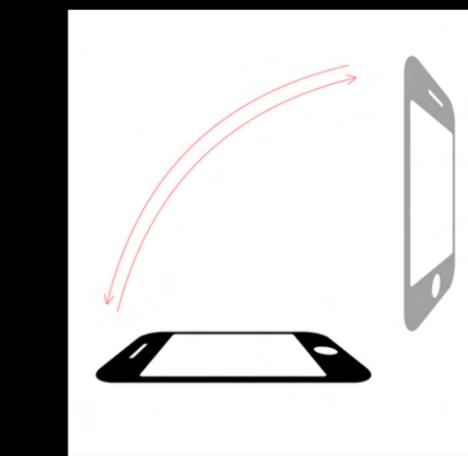
Stop

basic
state



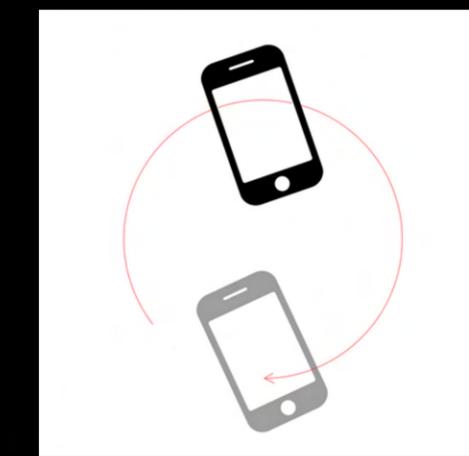
Spin

image
slicing



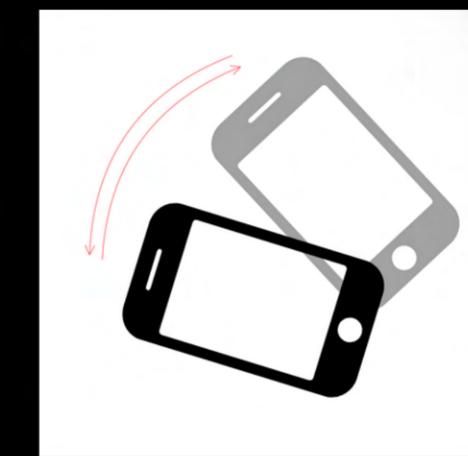
Stand

color
transformation



Rotate

mixing
(circular)



Shake

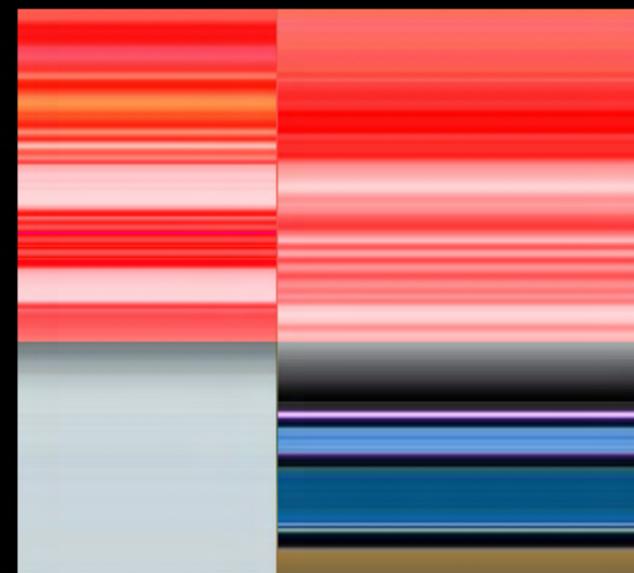
add
image

OSC Input(6) : Acc(x,y,z), Gyro(x,y,z)
Output(1) : Class 5

Visualizing Gestures: Code

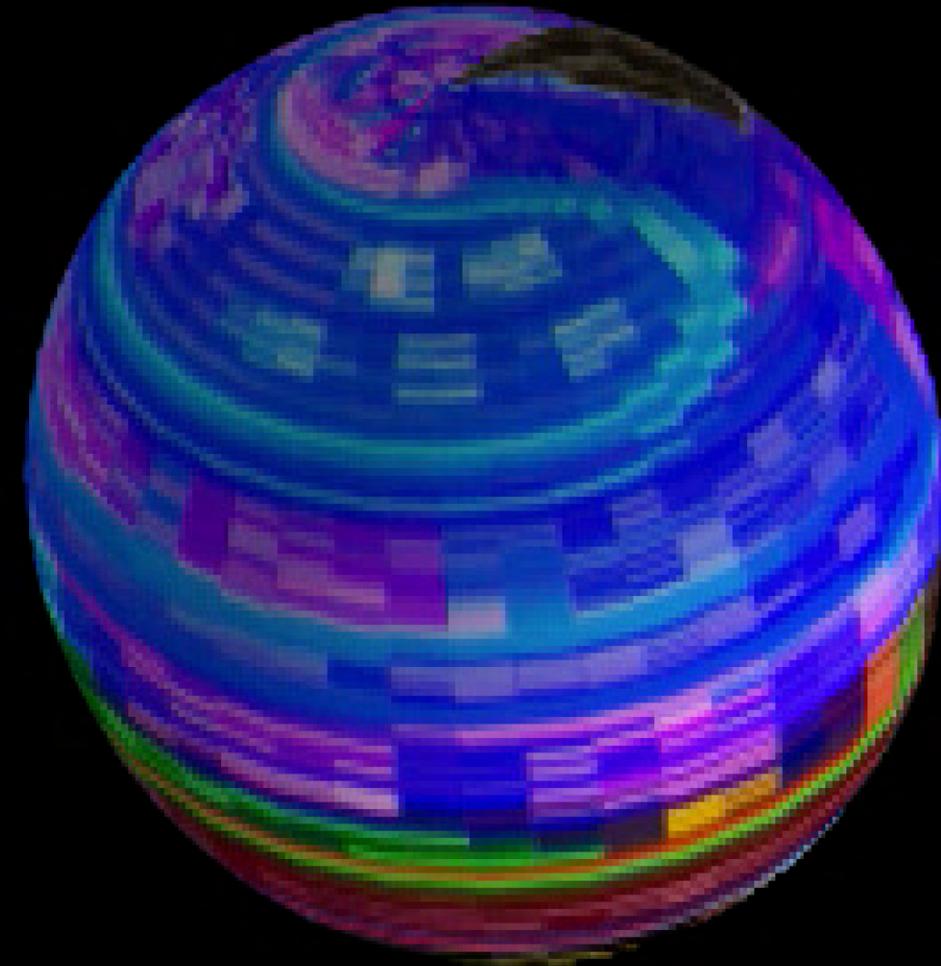
SLICING -> class 2

Deciding the Pixel Count for Slicing Based on the Slicing Gesture, Sending it to the Shader, and Creating a Planetary Texture by Slicing the Image



```
if(type==2.0 && (currentTime - lastTime > 400)){  
    if(pixelnum_x>1)  
    {pixelnum_x=pixelnum_x-100;  
     pixelnum_x=map(pixelnum_x,0,800,0,150);}  
    else{pixelnum_x=800;}  
    //슬라이싱 제스처-----  
    setShaderParameters();  
    shader(shade);  
    if(CanvasImage!=null)  
        image(CanvasImage,0,0,2000,1600);  
    resetShader();  
  
void setShaderParameters()  
{  
    shade.set("pixels", pixelnum_x, pixelnum_y);  
    shade.set("texture2", slicing_bg);  
      
    vec2 p = vertTexCoord.st;  
    p.x -= mod(p.x, 1.0 / pixels.x);  
  
    vec3 col = texture2D(texture, p).rgb;  
    vec3 textureColor = texture2D(texture2, p).rgb;  
  
    vec3 col2=vec3(col.x,col.y,col.z);  
    if((col.x<0.02)&& (col.y<0.02)&&(col.z<0.02)){col2=textureColor;}  
    gl_FragColor = vec4(col2, 1.0);  
}
```

Visualizing Gestures: Code



COLOR TRANSFORMATION -> class 3

Change the RGB value of a particular pixel in the image.



```
for (int i = 0; i < width; i++) {  
    x++;  
    for (int h = 0; h < height / 2; h++) {  
        color currentColor = pixels[x + (y + h) * width];  
  
        // 픽셀의 색상을 특정 색상으로 변경  
        float r = red(currentColor) + red(targetColor);  
        float g = green(currentColor) + green(targetColor);  
        float b = blue(currentColor) + blue(targetColor);
```

Visualizing Gestures: Code



ROTATING -> class 4

Extracts the tileSize part of the image and creates a new image transformation collage through rotation.



```
while(radius < width/2 && (type==4.0))
{
    int portionX = int(random(0,CanvasImage.width-tileSize));
    int portionY = int(random(0,CanvasImage.height-tileSize));
    PImage portion = CanvasImage.get(portionX,portionY,tileSize,tileSize);

    pushMatrix();
    translate(width/2,height/2);
    rotate(angle);
    translate(radius,0);
    image(portion,posx,posy);
    popMatrix();
    angle += radians(6);
    radius += 0.5;
```

Visualizing Gestures: Code



Shake -> class 5

Create new images on the screen.
It looks like some collage.

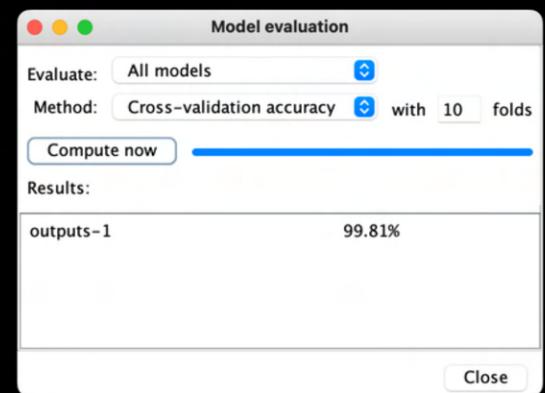


```
if (type == 5.0 && currentTime - lastTime > 400)
{
    image(stickers[int(random(0,totalimages))],
        random(100,width-100),random(100,height-100));
    saveFrame("Canvas.png");
    //use saveFrame to save current Canva's graphics
    CanvasImage = loadImage("Canvas.png");
    // 현재 시간으로 갱신
    lastTime = currentTime;
}
```

Of course, You can use all these things together to texture!

MODEL-EVALUATION

K-NN



basic
state

Decision Tree

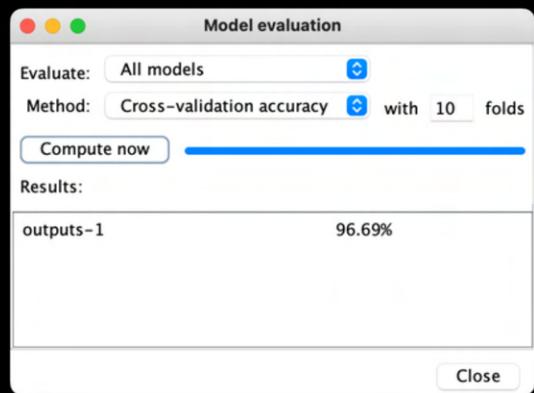
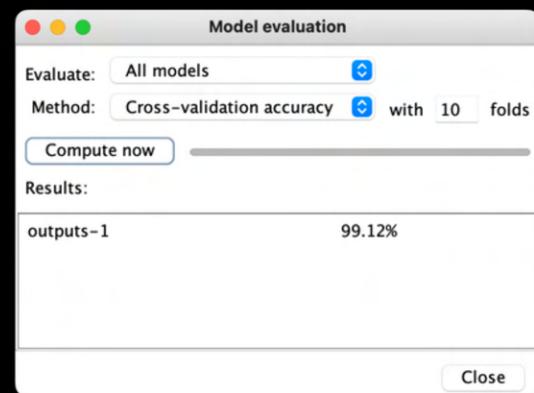


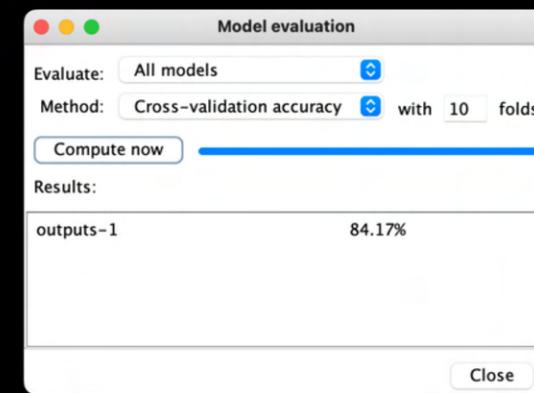
image
slicing

adaboost



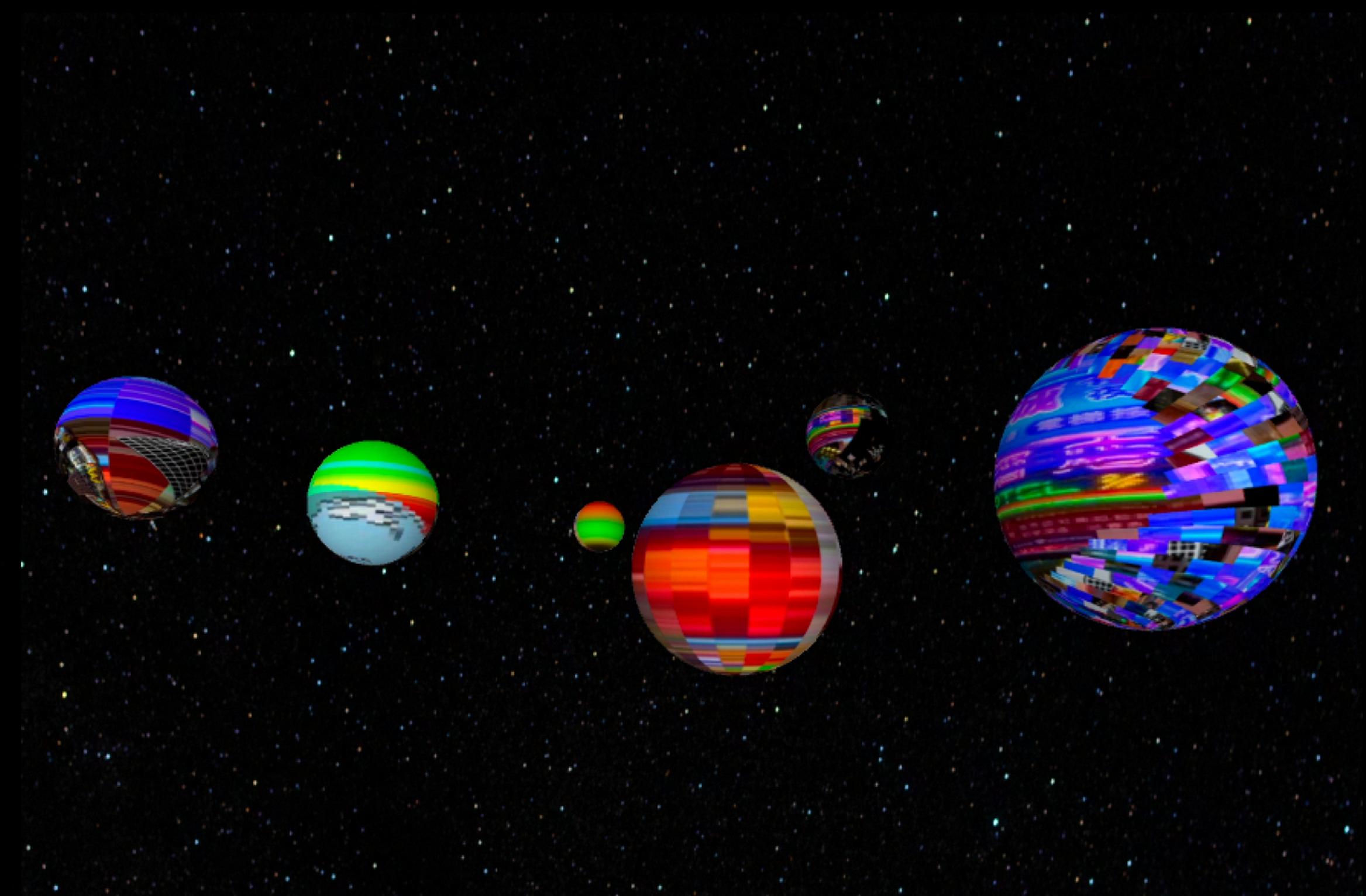
mixing
(circular)

SVM



add
image

SCREENSHOT



SCREENSHOT

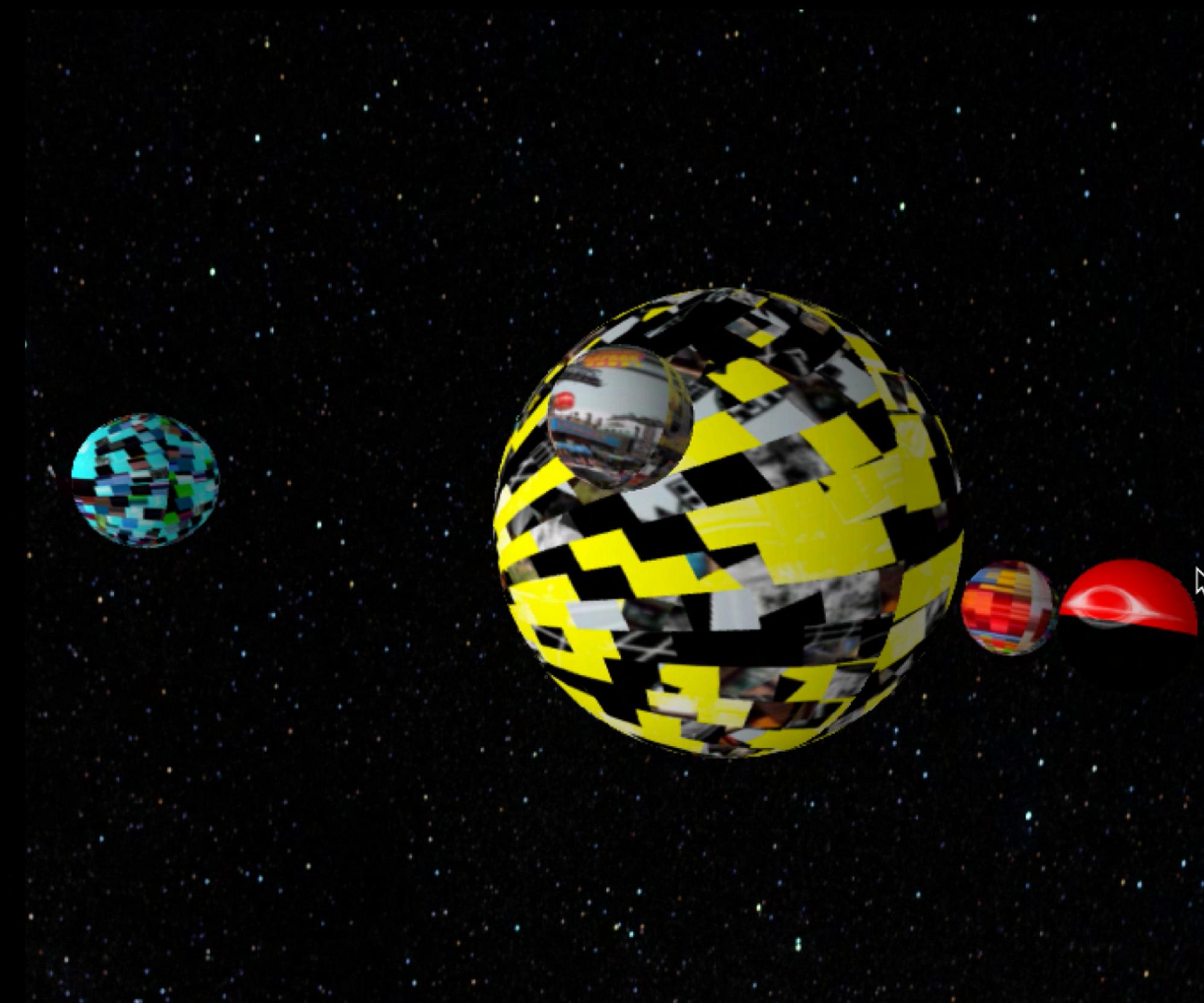


Image Collage Created Using This App

