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👤 **jasper-zheng** read

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≣ 139 lines (108 sloc) | 6.38 KB   `</>` ⧠ Raw Blame   🖥 ⧉ ✎ 🗑

Weekly Assessment 🦔

Coding Two: Advanced Frameworks

Jasper Zheng (Shuoyang)

[Full Git Repository](#)

Week 02: Channel Vocoder by ofxMaxim

📹 vocoder.mp4 ▾

Original Recording

Modulator

Carrier

> Output

0:00 ———————————————○———————————————— -0:28

[Git](#)

This is a 30-band vocoder implemented in openFrameworks using Maximilian library.
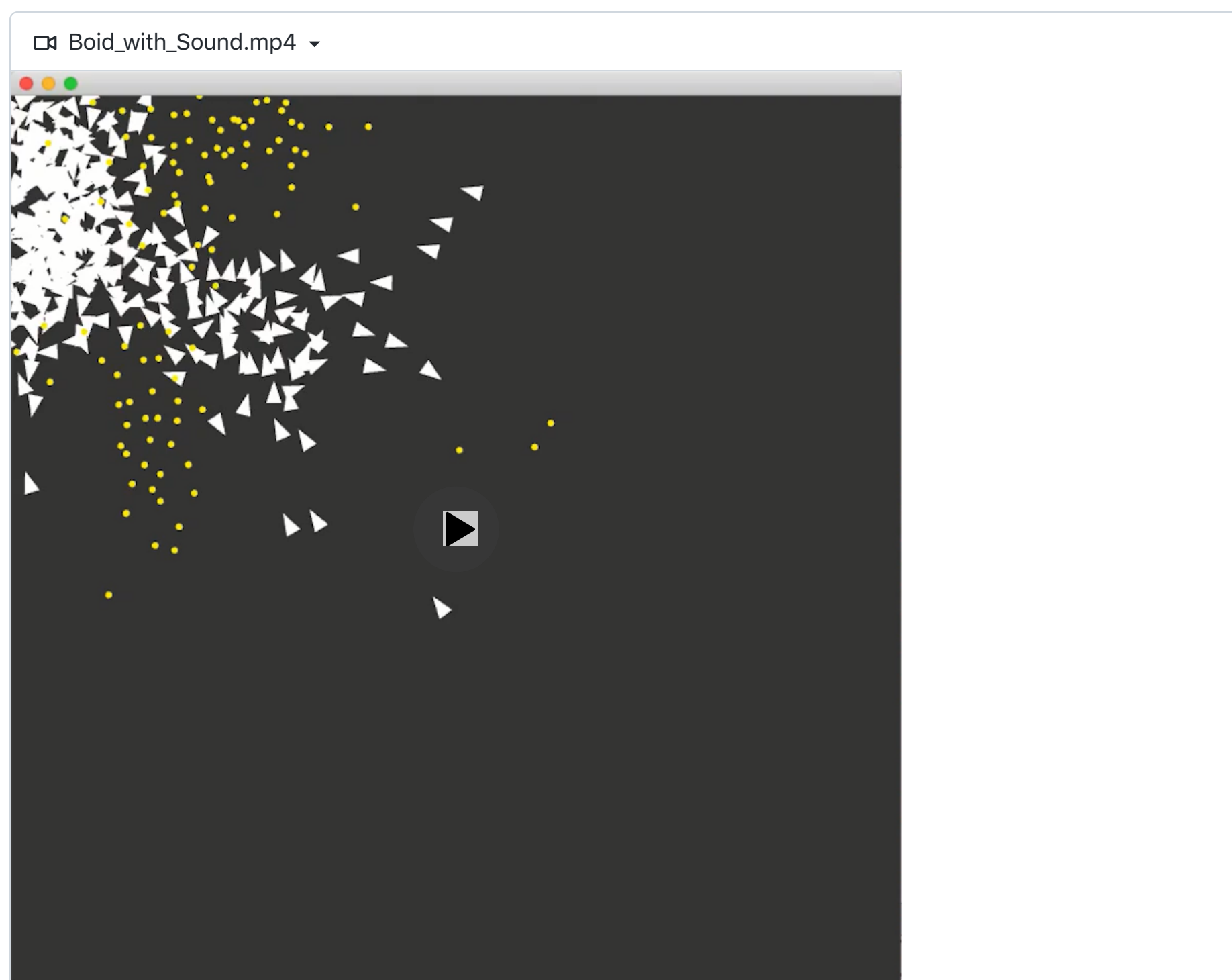
Implementation

Shown in the diagram above, where the modulator is the original vocal (plus another pitched down voice just to have more low end), the carrier is a group of sqare waves, `n = 30`. The bandpass filters and the envelope followers are
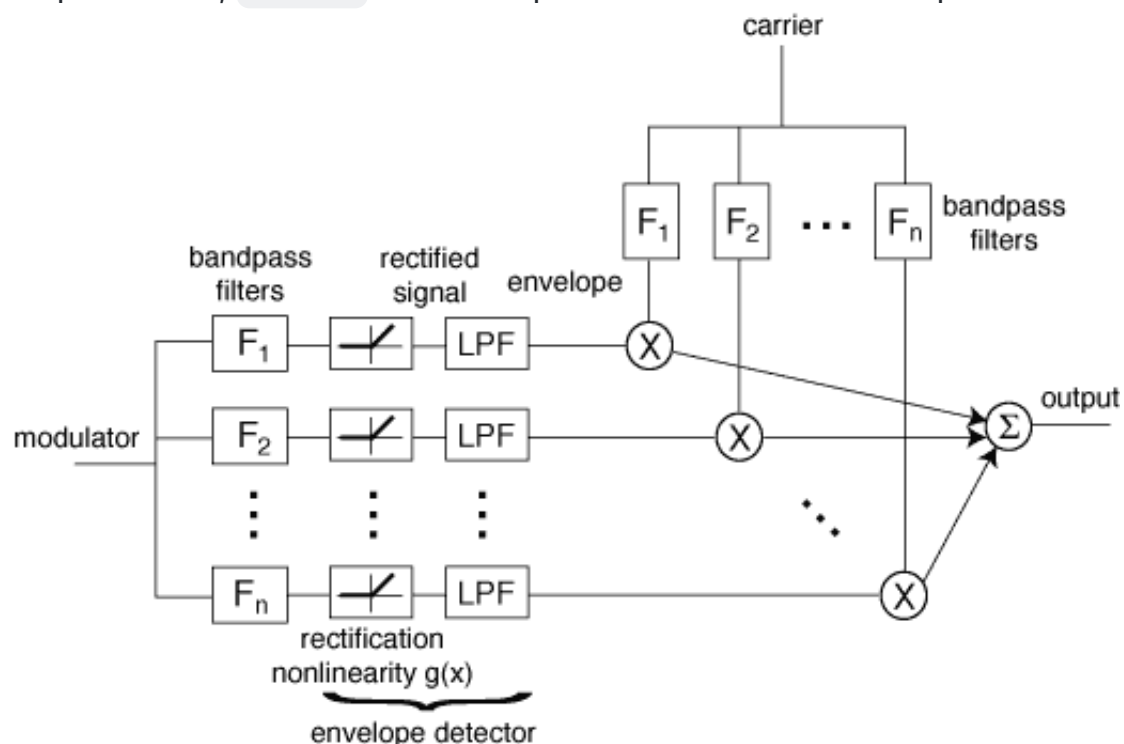
using classes in the Maximilian library.

↑ Img Reference

Week 03: Two Group of Boids with Noises

Git

An implementation of boids with polymorphism class in openFrameworks.

Implementation
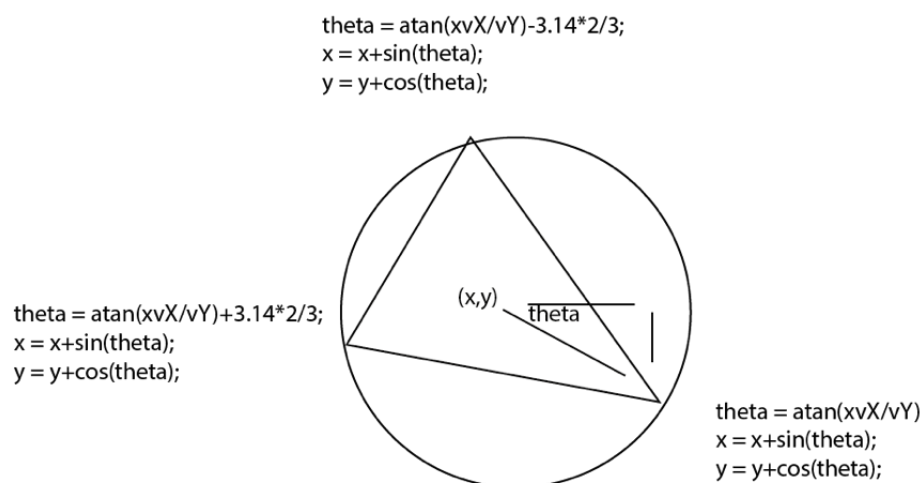
Polymorphism

In `boid.h` :

```
virtual void draw();
```

In `ofApp.cpp` :

```
for (int i = 0; i < 300; i++){
      boids.push_back(new Boid());
    }
    for (int i = 0; i < 100; i++){
        Boid * thisObs = new Obstacle;
        obstacles.push_back(thisObs);
    }
```

Draw Triangles

X,Y -> frequency and amplitude
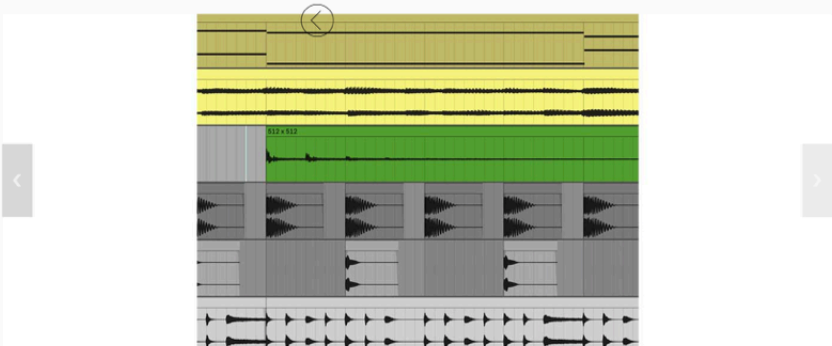
```
for (int i = 0; i < output.getNumFrames(); ++i){

        double wave = osc1.sinewave(boids[5]->getPosition().x)*boids[5]->getPosition().y/800 +
                osc2.sinewave(boids[50]->getPosition().x)*boids[50]->getPosition().y/800 +
                osc3.sinewave(boids[20]->getPosition().x)*boids[20]->getPosition().y/800 +
                osc4.sinewave(obstacles[20]->getPosition().x)*obstacles[20]-
>getPosition().y/800 +
                osc5.sinewave(obstacles[10]->getPosition().x)*obstacles[10]-
>getPosition().y/800 +
                osc6.sinewave(obstacles[70]->getPosition().x)*obstacles[70]-
>getPosition().y/800 +
                osc7.sinewave(boids[200]->getPosition().x)*boids[200]->getPosition().y/800 +
                osc8.sinewave(boids[280]->getPosition().x)*boids[280]->getPosition().y/800;
        output[i * outChannels] = wave/10;
        output[i * outChannels + 1] = output[i * outChannels];
```
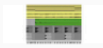
Week 05: Python Challenges with DCT and the Sieve of Eratosthenes

Git

Python Challenge #Waves are Images

Hint: It's not a square wave, it's a square

images_are_waves.wav

[Level 001](#)
[Jupyter Notebook Solution](#)

Python Challenge #8392842

Hint: everybody searches for the largest result

Sift the two's and sift the three's:
sieve of Eratosthenes.
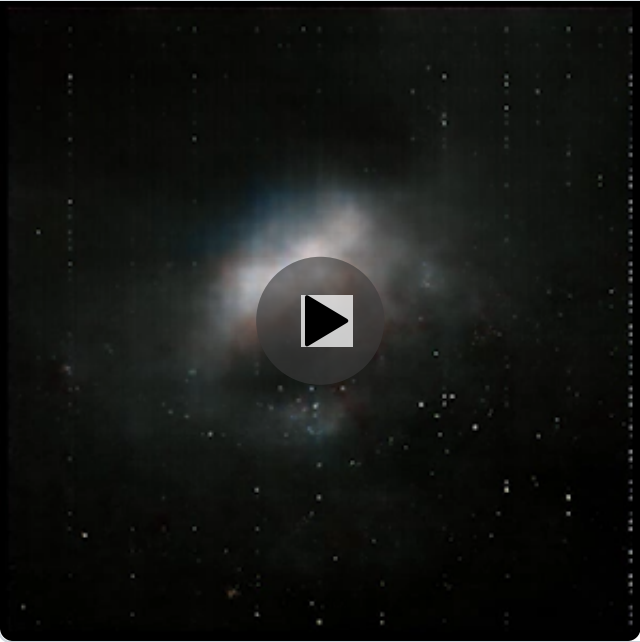when the multiples sublime,
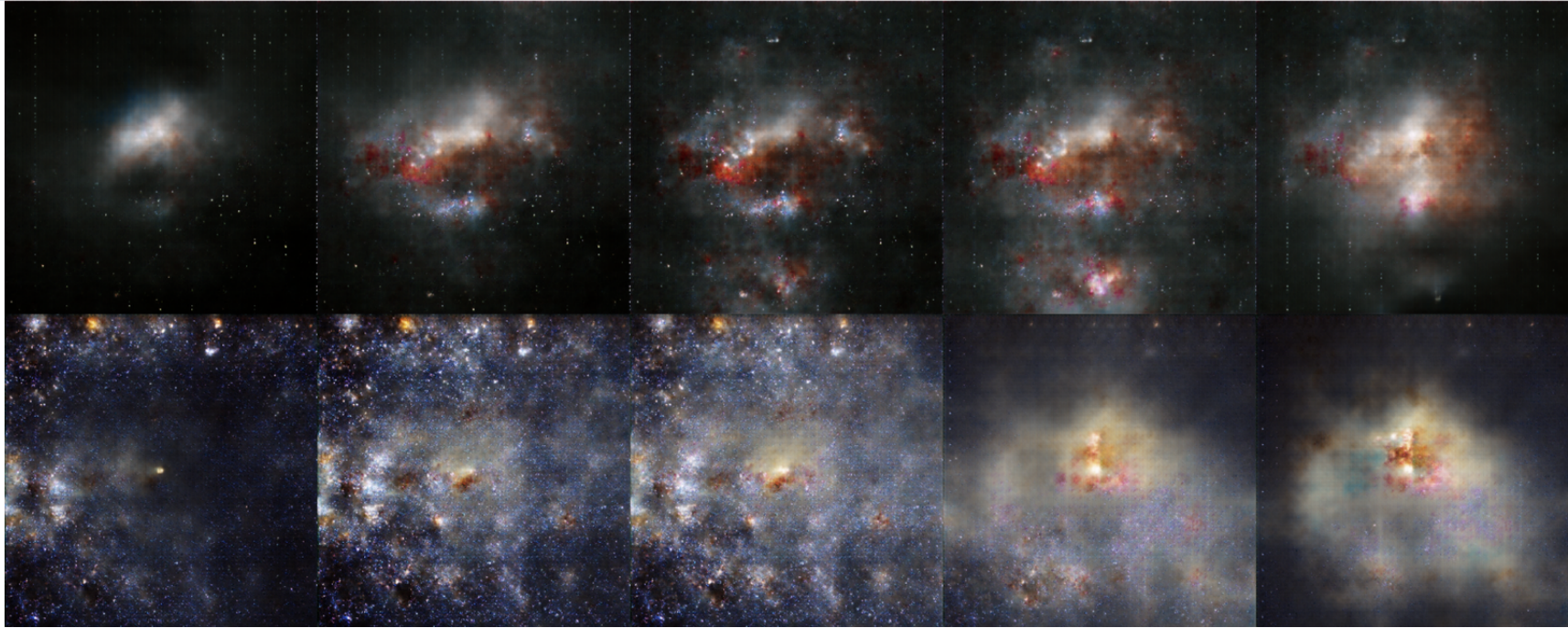numbers that remain are prime.

[Level 002 (with solution)](#)

Week 0708: DCGAN Trained on NASA's Space Images

[Git](#)

I trained a GAN model trained on 1k+ Hubble Space Telescope images.

Implementation

[Jupyter Notebook](#)

```
Model: "sequential_1"
_____
Layer (type)                 Output Shape              Param #
=================================================================
dense_1 (Dense)              (None, 3200)              323200
_____
leaky_re_lu_7 (LeakyReLU)    (None, 3200)              0
_____
reshape (Reshape)            (None, 5, 5, 128)         0
_____
conv2d_transpose (Conv2DTran (None, 10, 10, 128)       147584
_____
leaky_re_lu_8 (LeakyReLU)    (None, 10, 10, 128)       0
_____
conv2d_transpose_1 (Conv2DTr (None, 20, 20, 128)       147584
_____
leaky_re_lu_9 (LeakyReLU)    (None, 20, 20, 128)       0
_____
conv2d_transpose_2 (Conv2DTr (None, 40, 40, 128)       147584
_____
leaky_re_lu_10 (LeakyReLU)   (None, 40, 40, 128)       0
_____
conv2d_transpose_3 (Conv2DTr (None, 80, 80, 32)        36896
_____
leaky_re_lu_11 (LeakyReLU)   (None, 80, 80, 32)        0
_____
conv2d_transpose_4 (Conv2DTr (None, 160, 160, 16)      4624
_____
leaky_re_lu_12 (LeakyReLU)   (None, 160, 160, 16)      0
_____
conv2d_transpose_5 (Conv2DTr (None, 320, 320, 16)      2320
_____
leaky_re_lu_13 (LeakyReLU)   (None, 320, 320, 16)      0
_____
conv2d_transpose_6 (Conv2DTr (None, 640, 640, 16)      2320
_____
leaky_re_lu_14 (LeakyReLU)   (None, 640, 640, 16)      0
_____
conv2d_7 (Conv2D)            (None, 640, 640, 3)       771
=================================================================
Total params: 812,883
Trainable params: 812,883
Non-trainable params: 0
_____
```