INFRA

Laurent

Trucheteries : pour faire des trucheteries au plotter ou à la brodeuse, il faut joindre des chemins disjoints avec vpype :

```
vpype read truchet_094.svg linemerge linesimplify -t 0.05 write truchet_94_merge.svg
```

Infrabuble

https://dev.laurent-malys.fr/bacasable/infra/

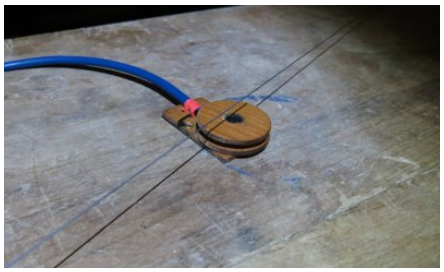
Multitude

https://multitude.labomedia.org/
https://multitude.exsitu.xyz/v/map/19255da86d5b11f61

Dessins génératifs

Broderie + upcycling : https://www.instagram.com/p/C58HraKiuYE/?img_index=1
Trucs à broder: https://dev.laurent-malys.fr/harmono-bro/

Infra PickUp



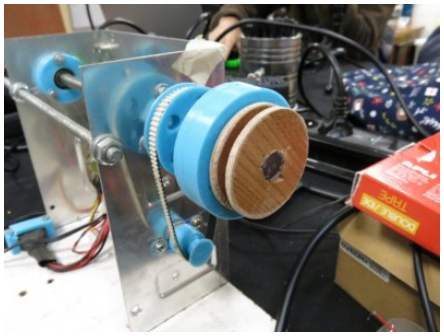
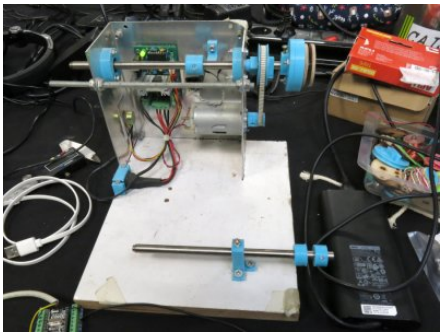
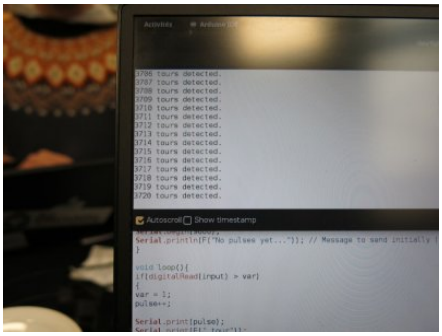
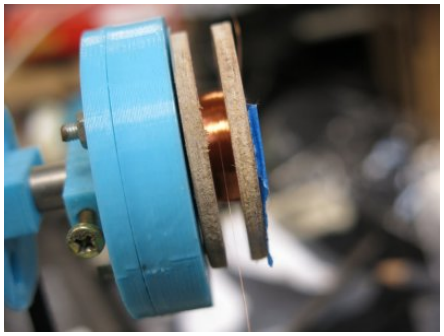
Profiter de ces beaux jours d'automne pour se chauffer au néons et ressortir la petite bobineuse pour créer un mirco

la base infrastructurelle

- Deux disques de cp plaqué de 3 mm découper à la scie cloche
- Un aimant Alnico de 10mm de diamètre
- Du fil enamel de 0,063mm de diamètre
- Une plaque rectangulaire pour insérer les œillets et fixer le câbles audio

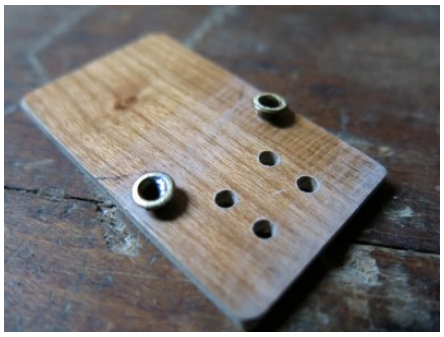
le bobinage

- Un petit programme arduino pour compter les tour de bobines (grâce à un aimant placer sur l'axe de rotation et interrupteur reed)
    - récupérer ici : https://forum.arduino.cc/t/simple-pulse-counter/519930
- Environs 3500 tours

assemblage

- La bobine et la base sont collés à l'epoxy

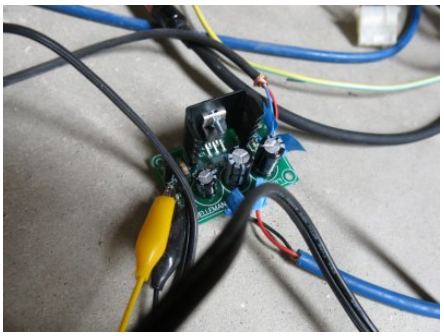
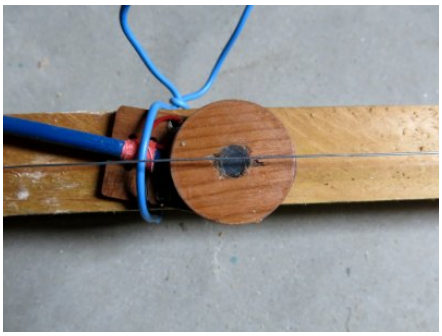
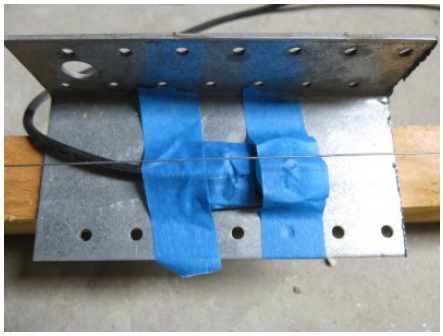


trempage

- Pour donner à l'ensemble un peu d'homogénéité et surtout protéger la bobine le tout est laisser trempé dans de la paraffine jusqu'à temps qu'il n'y ai plus de petites bulles


essai infrabassique avec retour d'informations

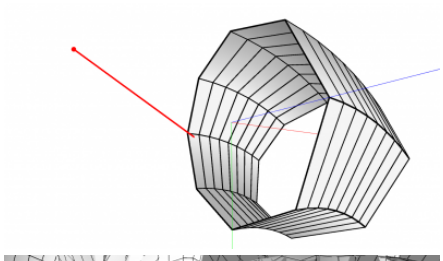
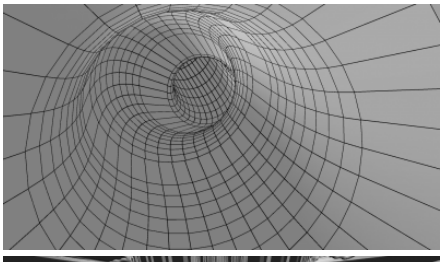
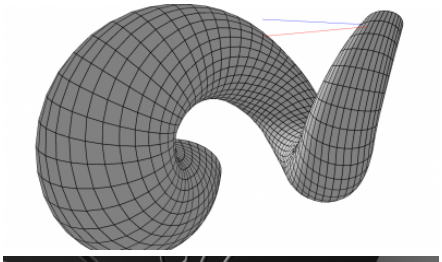
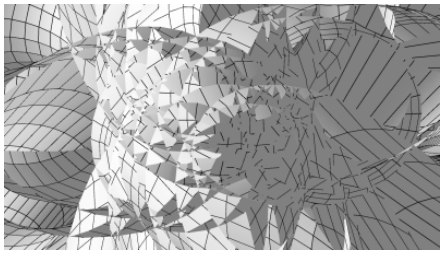
- Ça fonctionne plutôt bien au niveau des infras
- Ajout d'un second micro (caché sous le scotch bleu)
- Câblage du gros micro et du petit avec un ampli mono 7W pour créer un feedback de résonnances

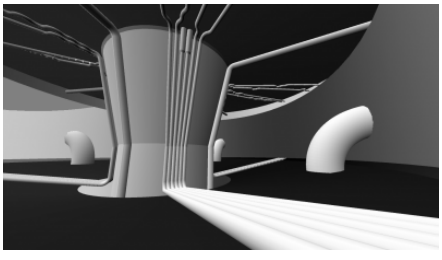





Infra graphique

Dérive dans les images semi-graphiques. Avant le graphisme «hi-res». Journal : infra-graphique

Quaternion



iteration1.pde

```
import queasycam.*;
import com.badlogic.gdx.math.*;
import nervoussystem.obj.*;


QueasyCam cam;

static final Vector3 xAxis = new Vector3(1.0, 0.0, 0.0);
float rootSize = 8;
int numSeg = 128;

Segment root = new Segment(null, 10, new Quaternion());


public void setup() {
  fullScreen(P3D);

  cam = new QueasyCam(this, 1, 9999);
  cam.key_forward = 'o';
  cam.key_left = 'k';
  cam.key_backward = 'l';
  cam.key_right = 'm';
  cam.key_up = 'i';
  cam.key_down = 'p';

  sphereDetail(16);

  Segment c1 = root.branch(rootSize, new Quaternion().setEulerAngles(0, 0, -100));
  Segment c2 = root.branch(rootSize, new Quaternion().setEulerAngles(120, 0, -100));
  Segment c3 = root.branch(rootSize, new Quaternion().setEulerAngles(240, 0, -100));
  for (int i=0; i<numSeg; i++) {
    c1 = c1.branch(rootSize * pow(1.0-i/(20.0*numSeg), i), new Quaternion());
    c2 = c2.branch(rootSize * pow(1.0-i/(20.0*numSeg), i), new Quaternion());
    c3 = c3.branch(rootSize * pow(1.0-i/(20.0*numSeg), i), new Quaternion());
  }

  root.update();
}

public void draw() {
  checkKeys();

  background(255);
  lights();

  noStroke();
  translate(width/2, height/2);

  sphere(50);

  root.draw();
}


void checkKeys() {
  if (keyPressed == false)
    return;

  float step = 0.1;
  Quaternion rotation = new Quaternion();
  if (key == 'a') {
    rotation.setEulerAngles(-step, 0.0, 0.0);
  }
  if (key == 'z') {
    rotation.setEulerAngles(step, 0.0, 0.0);
  }
  if (key == 'q') {
    rotation.setEulerAngles(0.0, -step, 0.0);
  }
  if (key == 's') {
    rotation.setEulerAngles(0.0, step, 0.0);
  }
  if (key == 'w') {
    rotation.setEulerAngles(0.0, 0.0, -step);
  }
  if (key == 'x') {
    rotation.setEulerAngles(0.0, 0.0, step);
  }

  for (Segment seg : root.children) {
    while (seg.hasChildren()) {
      seg.localRot.mul(rotation).nor();
      seg = seg.children.get(0);
    }
    seg.localRot.mul(rotation).nor();
  }

  root.update();
}
```

```
/*****************************
**       class Segment      **
*****************************/

public class Segment {
  static final int faces = 32;
  static final float l2b = 10.0;  // Length to base ratio

  protected Segment parent = null;
  protected Vector3 head = new Vector3();
  protected Vector3 rootWorldPos = null;

  private Quaternion localRot = new Quaternion(); // Rotation from parent Segment
  private Quaternion globalRot = new Quaternion(); // Total rotation in world space
  private float len;
  private float baseRadius;
  private Vector3[] points = new Vector3[faces];
  private Vector3 tmpVec = new Vector3();

  private ArrayList<Segment> children = new ArrayList();

  public Segment(Segment parent, float len, Quaternion rot) {
    this.parent = parent;
    if (parent == null) {
      rootWorldPos = new Vector3();
      globalRot = rot.cpy();
    } else {
      rootWorldPos = parent.rootWorldPos;
    }
    this.localRot = rot.cpy();
    this.len = len;
    baseRadius = len * l2b * 0.5;
  }

  public Segment branch(float len, Quaternion rot) {
    Segment child = new Segment(this, len, rot);
    children.add(child);
    return child;
  }

  public boolean hasChildren() {
    return !children.isEmpty();
  }

  public void draw() {
    // Draw head line
    stroke(0);
    Vector3 up = new Vector3(0, len*0.4, 0);
    globalRot.transform(up);
    if (parent != null)
      line(parent.head.x, parent.head.y, parent.head.z, head.x, head.y, head.z);
    else
      line(0.0, 0.0, 0.0, head.x, head.y, head.z);

    // Draw UP line
    stroke(255, 0, 0);
    line(head.x, head.y, head.z, head.x + up.x, head.y + up.y, head.z + up.z);

    noStroke();
    if (hasChildren())
      drawSegment();
    else
      drawTip();

    for (Segment child : children)
      child.draw();
  }

  private void drawSegment() {
    beginShape(QUAD_STRIP);
    for (int i=0; i<faces+1; i++) {
      if (parent == null) {
        Quaternion rot = new Quaternion();
        rot.setFromAxisRad(xAxis, i * TWO_PI / faces);
        rot.mulLeft(globalRot);
        rot.transform(tmpVec);
        tmpVec.set(len, baseRadius, 0.0);
      } else {
        tmpVec.set(parent.points[i%faces]);
      }
      vertex(tmpVec.x, tmpVec.y, tmpVec.z);
      tmpVec.set(points[i%faces]);
      vertex(tmpVec.x, tmpVec.y, tmpVec.z);
    }
    endShape();
  }

  private void drawTip() {
    // Draw a capped tip if this segment has no children
    beginShape(TRIANGLE_FAN);
    vertex(head.x, head.y, head.z);
    for (int i=0; i<faces+1; i++) {
```

```
      if (parent == null) {
        Quaternion rot = new Quaternion();
        rot.setFromAxisRad(xAxis, i * TWO_PI / faces);
        rot.mulLeft(globalRot);
        rot.transform(tmpVec);
        tmpVec.set(len, baseRadius, 0.0);
      } else {
        tmpVec.set(parent.points[i%faces]);
      }
    }
    endShape();
  }

  public void update() {
    Vector3 pos = rootWorldPos.cpy();
    globalRot.set(localRot);
    if (parent != null) {
      pos.add(parent.head);
      globalRot.mulLeft(parent.globalRot).nor();
    }
    head.set(len, 0.0, 0.0); // Going right by default
    globalRot.transform(head);
    head.add(pos);

    float angle = 0.0;
    Quaternion rot = new Quaternion();
    for (int i=0; i<faces; i++) {
      rot.setFromAxisRad(xAxis, angle);
      rot.mulLeft(globalRot);
      tmpVec.set(len, baseRadius, 0.0);
      rot.transform(tmpVec);
      points[i] = tmpVec.cpy().add(pos);
      angle += TWO_PI / faces;
    }

    for (Segment child : children)
      child.update();
  }
}
```