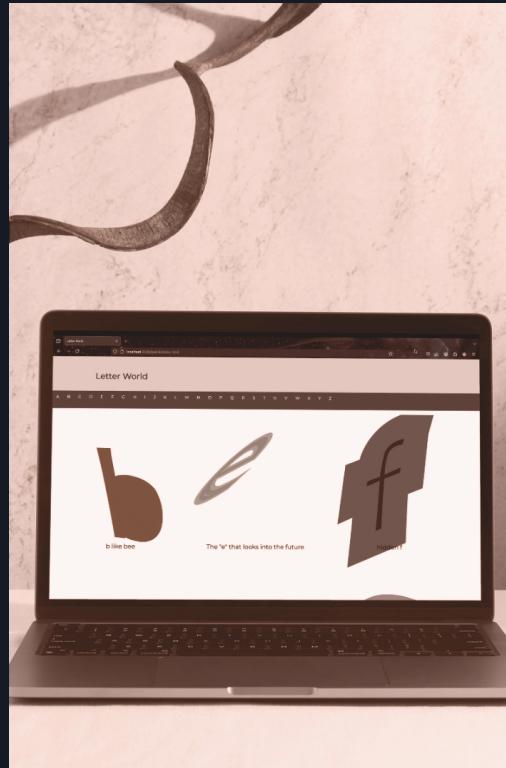
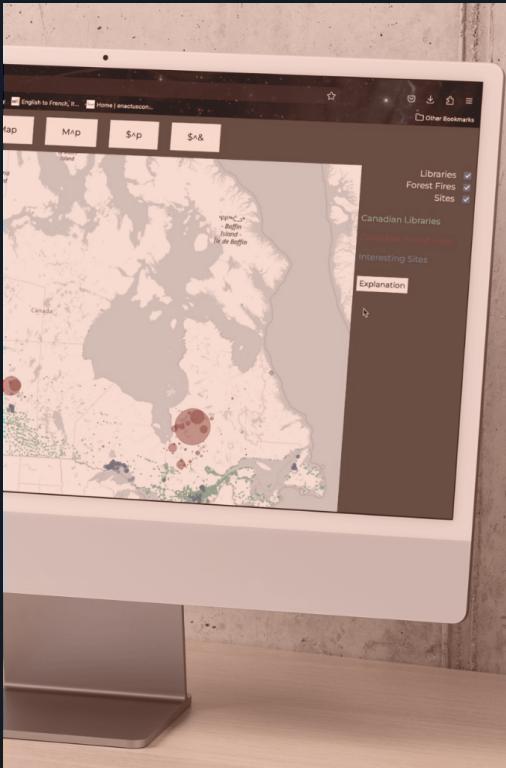


# Portfolio



By Mathilde Davan

# Mathilde Davan

## About Me

Web

3D

Tangible Media

UI/UX

Hello! My name is Mathilde Davan and I am nearing the end of my Bachelor's in Computation Arts at Concordia University. I am deeply interested in technology and its use in creative industries.

I love learning new software, programming languages, APIs and many other things! I have a keen interest in anything related to development, 3D and the making of tangible projects. I have had the chance to explore multiple branches of technology throughout my degree and I am excited to apply my knowledge in various technical and creative domains.

Feel free to **contact me!**



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# Reading Between the Lines

## 2023

About Me

Web

3D

Tangible Media

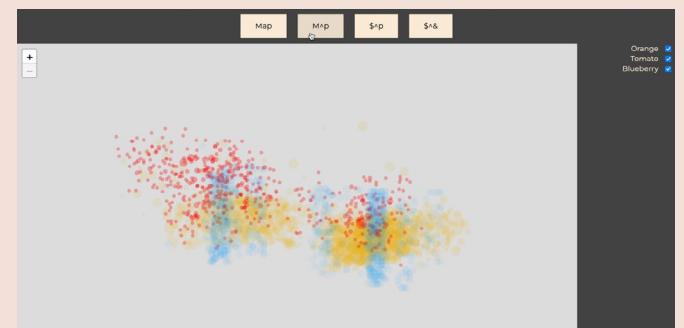
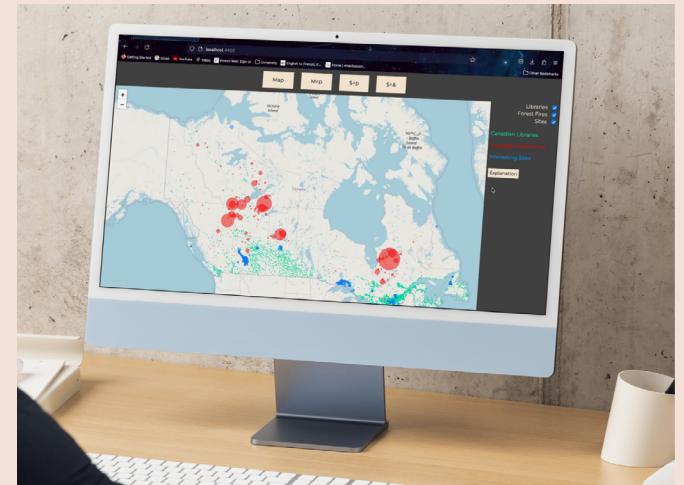
UI/UX

**Video:** <https://youtu.be/GHcg-ncjBaQ>

**Skills:** MongoDB, Nodejs, Web Socket, Leaflet, Konva, Bitmap and Audacity, HTML, CSS.

**Description text:** This project started with the idea of elevating books by visualising unrelated data next to book datasets. The goal of this project was to critique the power we give to data when we think of numbers as true and objective. Therefore, my goal in this project was to “make the data say” that books are overall great by juxtaposing unrelated datasets. I hoped to push my project to such an absurd scale that anyone would question the “truth” I am showing them. Another aspect of the project was to transform the visualisation from scientific looking with a seemingly academic argument to an unrecognisable abstract representation of the same data.

This project served as an introduction to databases and how to manipulate them.



# Letter World

2022

About Me

Web

3D

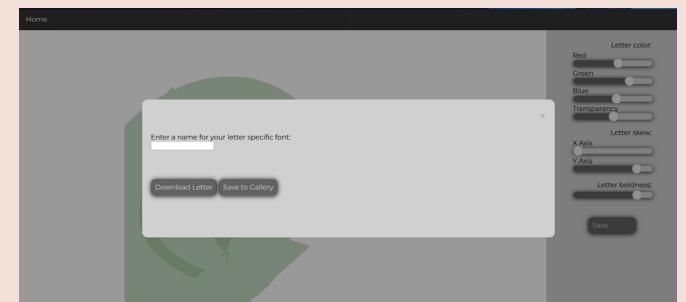
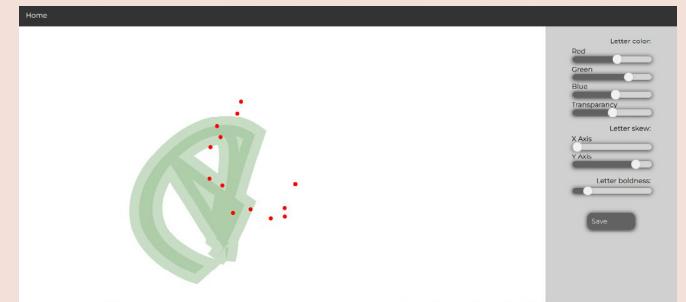
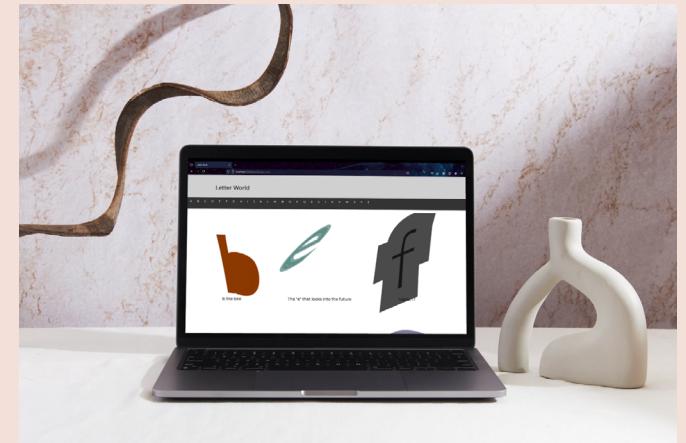
Tangible Media

UI/UX

**Video:** <https://youtu.be/RR47ojG--4Q>

**Skills:** SQLite, PHP, HTML, CSS, JavaScript.

**Description text:** The goal of the project was to demystify typography and experiment with the alphabet in unusual ways. It is a way of sharing strange and fun letter designs in anonymity without the need for knowledge in typography or design. The project to me was more to experiment and give ideas rather than produce a “perfect” final letter. This project was a first encounter with databases and a way to deepen my understanding of SVG manipulation.



# Arrival

2022

## About Me

**Project:** <https://mathi330.github.io/cart263/projects/project/night-at-the-movies/>

**Skills:** p5.js, JSON, annyang, OOP.

## Web

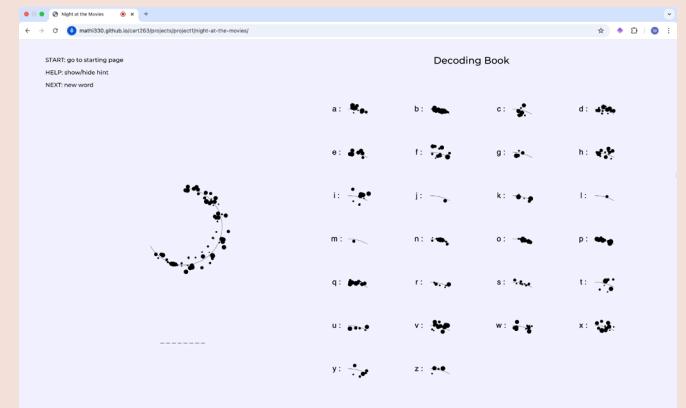
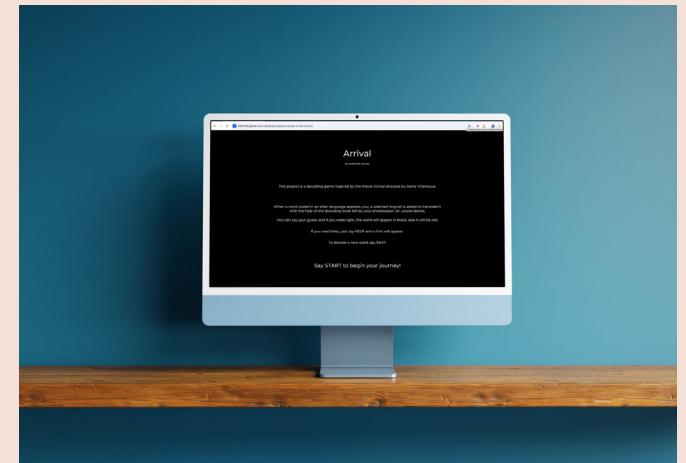
**Description text:** This project was inspired by the movie Arrival directed by Denis Villeneuve and the translation of extraterrestrial language. The player is presented with a circular design composed of sections representing letters of the alphabet. Next to the word to guess is a “decoding book” with the letters of the alphabet. The player can compare the letters to the design they see to find the word.

## 3D

## Tangible Media

## UI/UX

This simple game uses speech recognition for its navigation. The player can say “start”, “help” or “next” to navigate the game and once they know the word, they say it out loud to see if it is correct.



```
class Letter {
  constructor(letter) {
    this.letter = letter; // letter associated to the symbol
    this.twelfth = HALF_PI / 3; // a twelfth of a circle
    this.size = 240; // size of the alien language
    this.rotation = PI + HALF_PI;
  }
}

// design of the letter
this.numberOfDesign = Math.floor(random(15)); // number of small circles
this.designs = []; // array to store the individual circles of a letter
this.distRadius = random(3, 20);
let possiblePos = [0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9]; // positions for the circles on the twelfth
// creating the letter
for (let i = 0; i < this.numberOfDesign; i++) {
  this.designs.push({
    radius: this.size / 2 - this.distRadius,
    thisSize: this.size / 2 + this.distRadius,
    pos: random(possiblePos), // position in the twelfth
    designSize: random(5, 15), // size of the small circle
  });
}
```

# Book Cipher

2022

About Me

Web

3D

Tangible Media

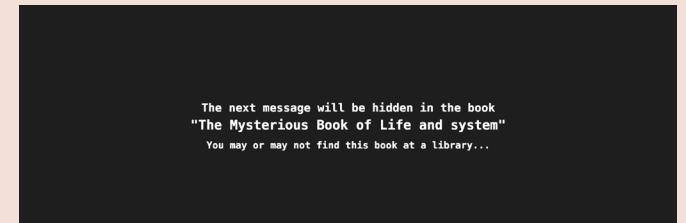
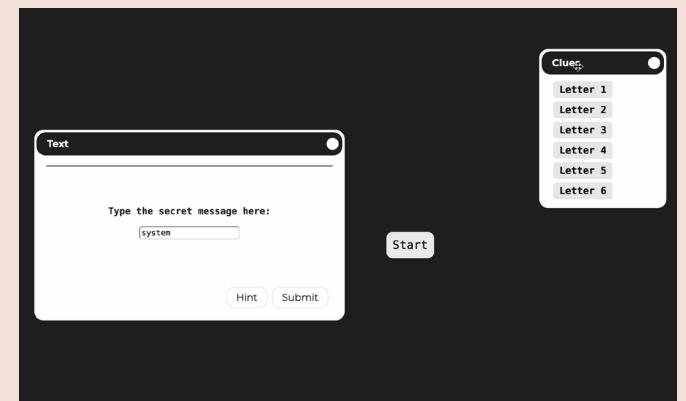
UI/UX

**Project:** <https://mathi330.github.io/cart263/projects/project2/final/>

**Skills:** jQuery, JSON, HTML, CSS, p5.js.

**Description text:** This project was inspired by secret codes and book ciphers. The goal was to combine a cipher with multiple mini games; the codes for each letter were not given from the start. The player was invited to finish each small game to get the character placement for each letter. Only after gathering the position of each letter can the player use it to find the word.

The overall skeleton for the project was created using jQuery and HTML, but each mini game was coded using the p5 library, annyang for speech recognition, and ml5 for the object detection which is now deprecated.



# Building Blocks

2021

## About Me

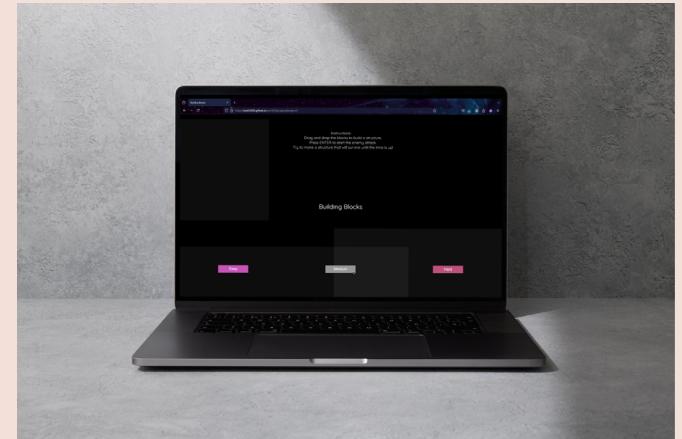
**Link:** <https://mathi330.github.io/cart253/projects/project1/>

## Skills: p5.js.

Web

**Description text:** This is a simulation where the player builds something using blocks and once ready, an enemy attack will start. The point of the simulation is to see if anything will be left once the time is up. The simulation starts with the chosen level and with materials for the player to build with. Once the player is done building, they can start the enemy attack.

During the attack, the player cannot interact with the simulation. They can see the remaining time at the bottom of the canvas with the dark line in the ground shrinking.



```
  assets
  .css
  .csd
  .libraries
  lib
  scripts
  index.html
  README.md
```

---

```
 653     function drawMaterial(material, otherMaterial) {
 654       ...
 655     }
 656   //loop to make the materials fall at the start of the simulation.
 657   if (materialIsStart) {
 658     //See if two shapes are overlapping at the beginning of the program
 659     if (shapeIsInsideShape(material, otherMaterial)) {
 660       //A lit better than before but still bugs when more than 2 materials overlap.
 661       if (shapeIsInsideShape(otherMaterial, material)) {
 662         //if material is higher than otherMaterial.
 663         if (material.y > otherMaterial.y) {
 664           otherMaterial.y = material.height / 2 + otherMaterial.height / 2;
 665           material.materialUnder = null;
 666           material.start = true;
 667           material.gravity = 0.05;
 668           otherMaterial.gravity = 0.05;
 669         }
 670         //if material is lower than otherMaterial.
 671         else if (material.y < otherMaterial.y) {
 672           material.y = otherMaterial.height / 2 + material.height / 2 + 5;
 673           otherMaterial.materialUnder = null;
 674           material.start = true;
 675           material.gravity = 0.05;
 676           otherMaterial.gravity = 0.05;
 677         }
 678       }
 679     }
 680   }
 681   //Makes the materials fall to the ground.
 682   startFallForMaterialOnTop(material);
 683   startFallForMaterialOnTop(otherMaterial);
 684   startFallForMaterial();
 685   startFallForOtherMaterial;
```

# Round and Round and . . .

2024

About Me

Web

**3D**

Tangible Media

UI/UX

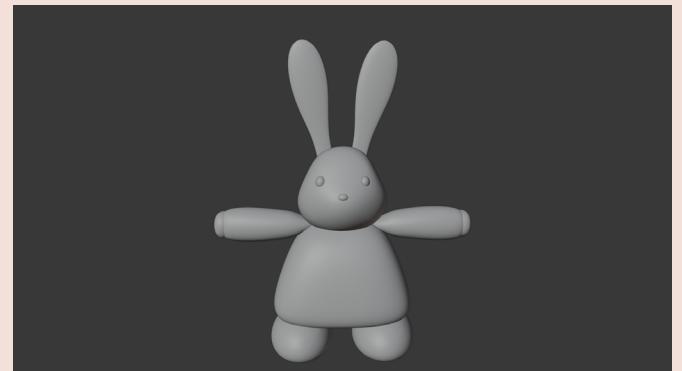
**Videos:** <https://youtu.be/gp1o4RiT6MK>

**Character:** <https://youtu.be/esKvsB3yWRU>

**Software:** Blender.

**Description text:** The project was made in the context of a 3D class, and the main guideline was to create a perfect loop. This project was made with the idea of Sisyphean tasks and the concept of a golden cage. The comfort given by the door seems more appealing than going off into the dark to find something else, like a job or lifestyle might be too good in some aspect to leave despite wanting to. The model was made to be cute to amplify the emptiness around it and the ambiguous situation he is placed in.

This project was my first experimentation with animation in 3D modelling which led me to learn a lot regarding rigging, walk cycles, and camera movements.



# Hearth's Heart

2024

**Software:** Blender.

**Description text:** This 3D project made in Blender consists of creating a creature and realistically embed it into a picture. I created a small fireplace creature interacting with a child. The conceptual aspect of this project was to create a creature representing the heart of the home. Fires have a comforting and hypnotic aspect to them that seems to bring people closer together. I wanted the creature's gesture towards the child to represent a welcome into the home and family. The creature is sharing a little bit of itself with the baby similarly to how we open to the people we live with.

This project introduced me to sculpting in Blender as well as to generate fire or smoke for the character. I also learned to create and use a shadow catcher to make my creature's shadow appear on the side of the fireplace.



About Me

Web

3D

Tangible Media

UI/UX

# Silk Dance

2024

About Me

**Videos:** [https://youtu.be/u-9KSz2nW\\_s](https://youtu.be/u-9KSz2nW_s)

[https://youtu.be/Q3lnPvX5\\_UQ](https://youtu.be/Q3lnPvX5_UQ)

**Skills:** C++, electronics.

**Material:** fabric, Arduino, L298N chip, 12V battery, worm gear motor (DCM-697).

**Dancer:** Ariane Lavoie

**Description text:** This personal project mixes elements of electronics and performance. The inspiration behind it comes from circus arts and aerials. In silks, the performer is manipulating the silk through sequences of movements. This project aimed at reversing the roles by having a dancer adapt to the silk's movements, changing the dynamic between the performer and apparatus.

This piece also includes lights that project the shadows of the silk and performer as they entangle and dance together. This element adds depth to the experience and aesthetic of the project.



**Tangible Media**

UI/UX

# Pencil Stroke

2024

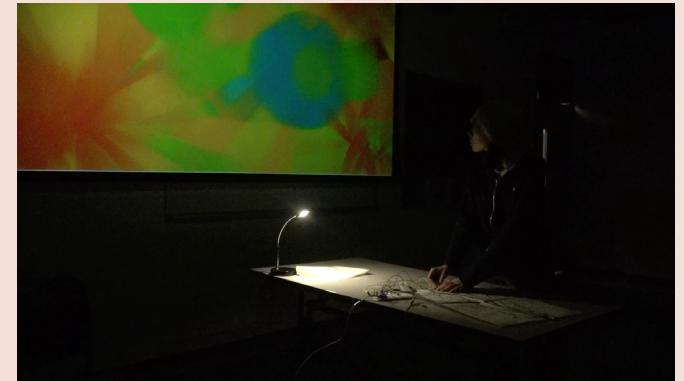
About Me

**Link:** <https://youtu.be/1yyG5ri49WU>

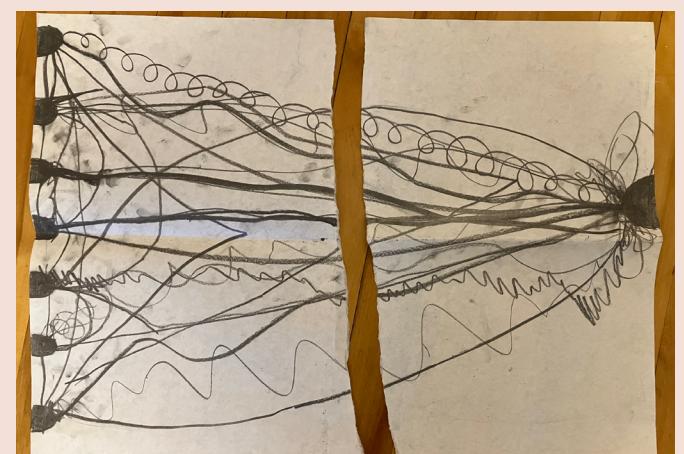
**Skills:** JavaScript, C++, electronics.

**Material:** Arduino, wires, paper, charcoal, computer, projector, desk lamp.

**Description text:** This project was a combination of electronics and coding in the context of an interactive performance. A large piece of paper and some charcoal were set on a table with wires attached to them. An Arduino was connected to a computer and the drawings on the paper were used as a medium for interaction with graphics projected by the computer. The audience was invited to draw on the paper which let sets of colourful particles to appear and move on the screen. The performance was concluded by the ripping of the paper to let the screen get back to its original black state.



```
134 }  
135 // We are connected and ready to go  
136 function serverConnected() {  
137   print("Connected to Server");  
138 }  
139  
140 // Get the list of ports  
141 function getList(theList) {  
142   print("List of Serial Ports");  
143   // theList is an array of their names  
144   for (let i = 0; i < theList.length; i++) {  
145     print(i + " " + theList[i]);  
146   }  
147 }  
148  
149 // Connected to our serial device  
150 function gotOpen() {  
151   print("Serial Port is Open");  
152 }  
153  
154 function gotClose(){  
155   print("Serial Port is Closed");  
156   letclose = "Serial Port is Closed";  
157 }  
158  
159 // If we see an error, let's log it  
160 function gotError(theerror) {  
161   print(theerror);  
162 }  
163  
164 // There is data available to work with from the serial port  
165 function getData() {  
166   let multiplier = 1;  
167   let currentString = serial.readLine(); // read the incoming string  
168   // console.log(currentString); // print the string  
169   letstring = currentString; // save it for the draw method  
170   if (!currentString) return;  
171 }
```



Web

3D

Tangible Media

UI/UX

# Reflection

2022

About Me

Web

3D

**Tangible Media**

UI/UX

**Link:** [https://youtu.be/rOZ-E\\_l2t7w](https://youtu.be/rOZ-E_l2t7w)

**Skills:** C++, electronics.

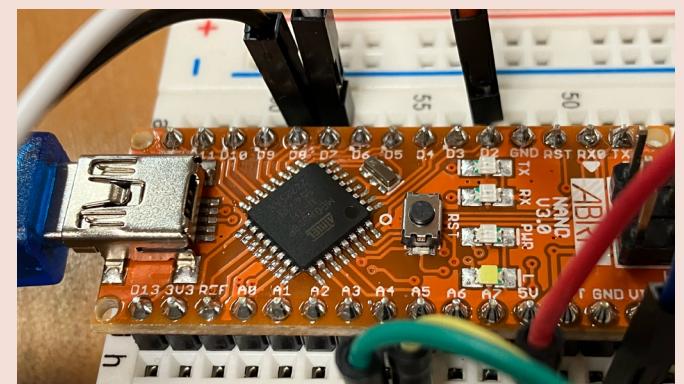
**Material:** Accelerometer, Xbee, temperature and humidity sensor, LED strip, portable charger, Arduino Uno, Arduino Nano, lantern, wristband.

**Team members:** Mathilde Davan: testing of sensors, configuration of Xbee, wiring, coding of the Arduinos, documentation.

Maxime Gagnon-Léger: sketches for proposal, design of the final bracelet.

**Description text:** This project consisted of a lantern-wristband wireless communication. The lantern's light and colour would fluctuate based on the data taken from sensors installed in the wristband.

This project was a fascinating learning experience to get Arduinos to communicate together through the air with the use of Xbees and the trial and error that comes with testing sensors for specific projects.



# Helping Hand

2023

About Me

**Link:** <https://www.figma.com/file/F64XoSEsBmMpX-75UQKrPDj/prototype2?node-id=0%3A1&t=ksBXyLkFyqG-gJqPh-1>

Web

**Skills:** UI/UX, Figma.

**Description text:** This project was a Figma prototype designed for students who study in a language other than their mother tongue. Rather than trying to teach a language for a more casual use as many language learning apps already do, Helping Hand would aim at helping student with the academic vocabulary that their field of study might require of them. The idea was that the app would put students in contact with other students who might help them or whom they might help. It would also recommend resources for writing and define terms that the student might encounter in their studies.

3D

Tangible Media

UI/UX

