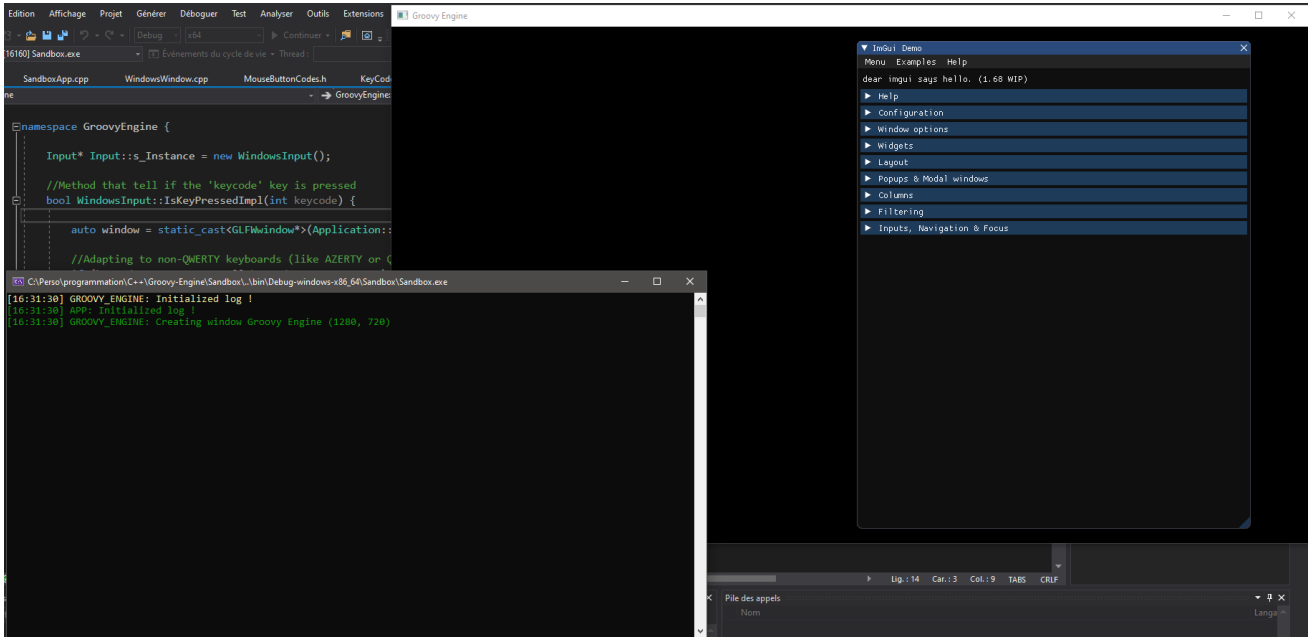
# Thomas von Ascheberg‘s Portfolio

*Main projects*

# Groovy Engine

*Jun. 2020 – today*

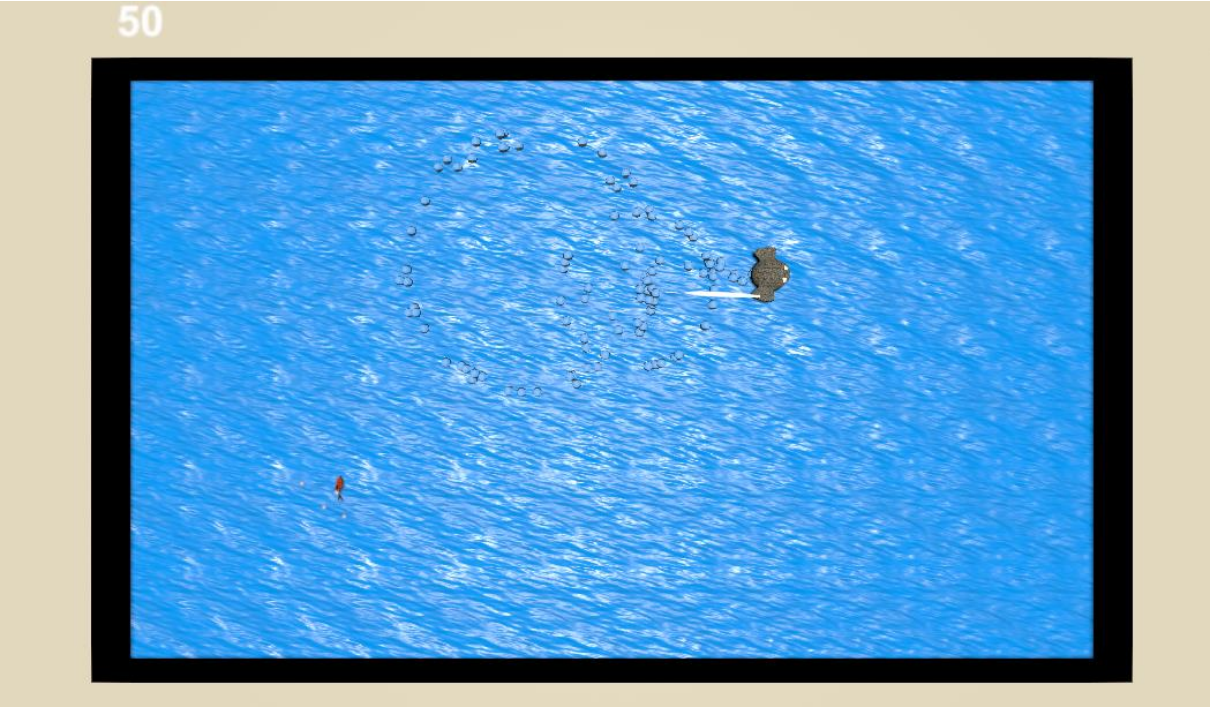



## Description :

Game engine based on the "Game Engine Series" of the YouTuber "theCherno". It is a personal challenge as I want to build a game engine at a professional level (quality-wise). My main objective is to learn a lot more on game engines and games. It is the first step in the long-term objective that I have about creating my own games.

# Sneaky Whale

*Oct. 2020*

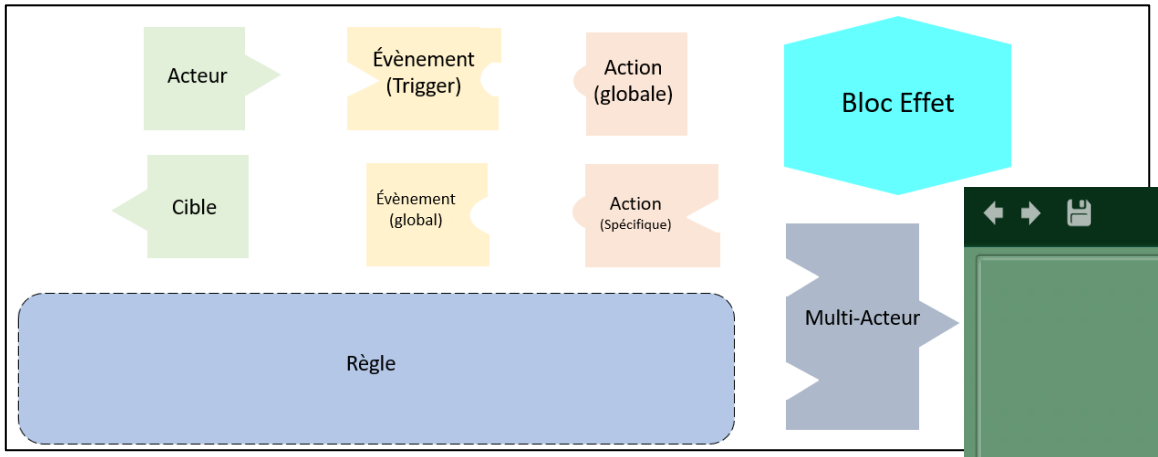


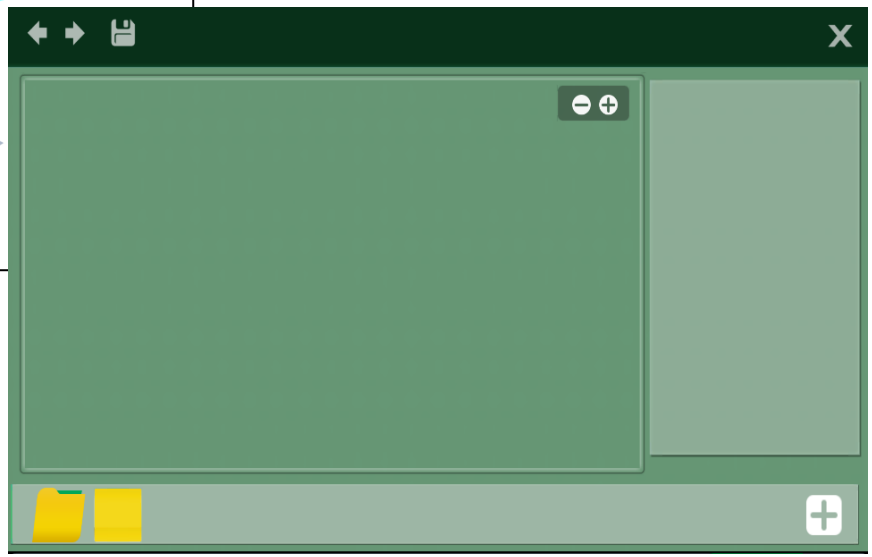

## Description :

Small game developed alone in a Game Jam spirit. I gave myself one week to answer an online challenge stating : "*Can you make this button fun to press?*". The aim of this project was to discover and test what creates "fun" in the gameplay a videogame.

# Nadeo Rule Designer

*Mar. 2020 – Sep. 2020*



## Description :

Conception & prototyping a visual modding system for TrackMania (done during my internship at Nadeo). The system is based around the principle of designing "rules" for the game (principle which could be compared to a grammar for a compiler). The prototype was built in ManiaScript and ManiaLink, two technologies created by Nadeo.

# Paris-Saclay's Ultimate Championship *Sep. 2019 – Mar. 2020*

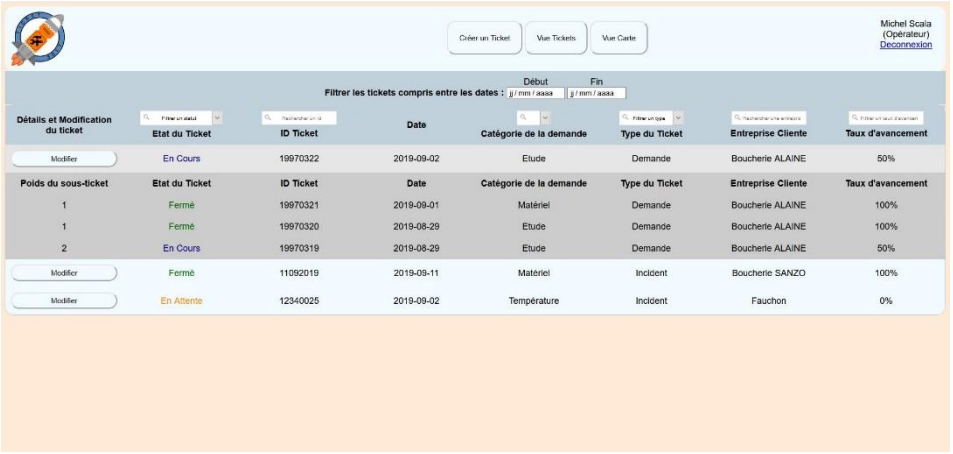


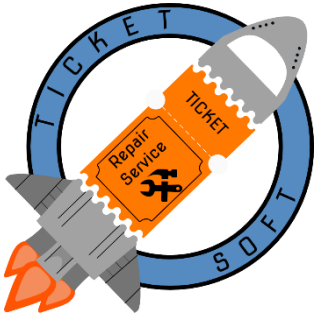

## Description :

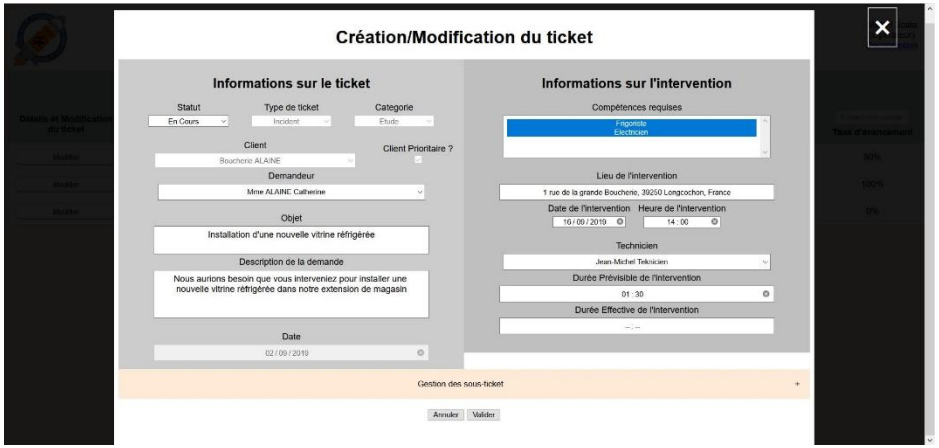
Paris-Saclay's Ultimate Championship was a video game competition organized on the videogame Super Smash Bros. Ultimate. It was a championship between 8 major universities in France with a big final tournament on the "Plateau de Saclay". I was managing a team of 25 organizers to make this event happen !

# TicketSoft

*Sep. 2019 – Mar. 2020*



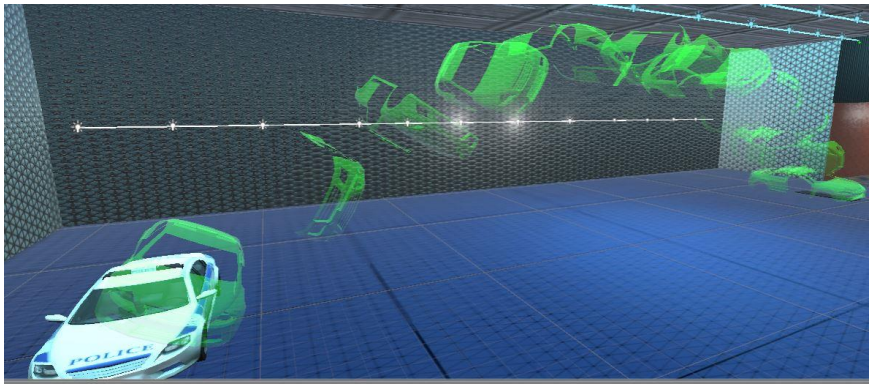



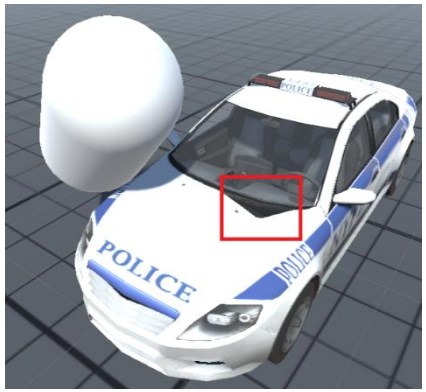

## Description :

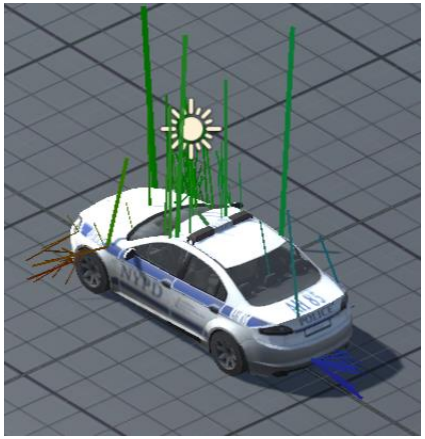
Leading a software engineering team of 6 people for the end of cursus project at Polytech Paris-Saclay. The software was a website dedicated to ticketing issues. It was a great full-stack development experience where we used agile methods to manage the project !

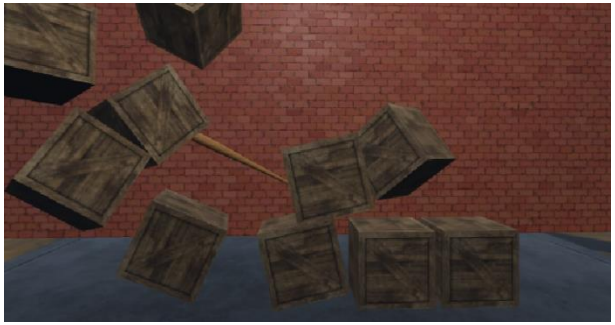
# CrashTestVR

*Jan. 2020 – Mar. 2020*



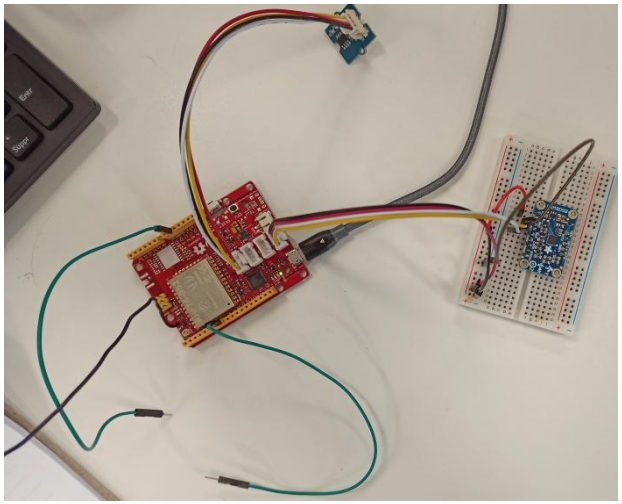


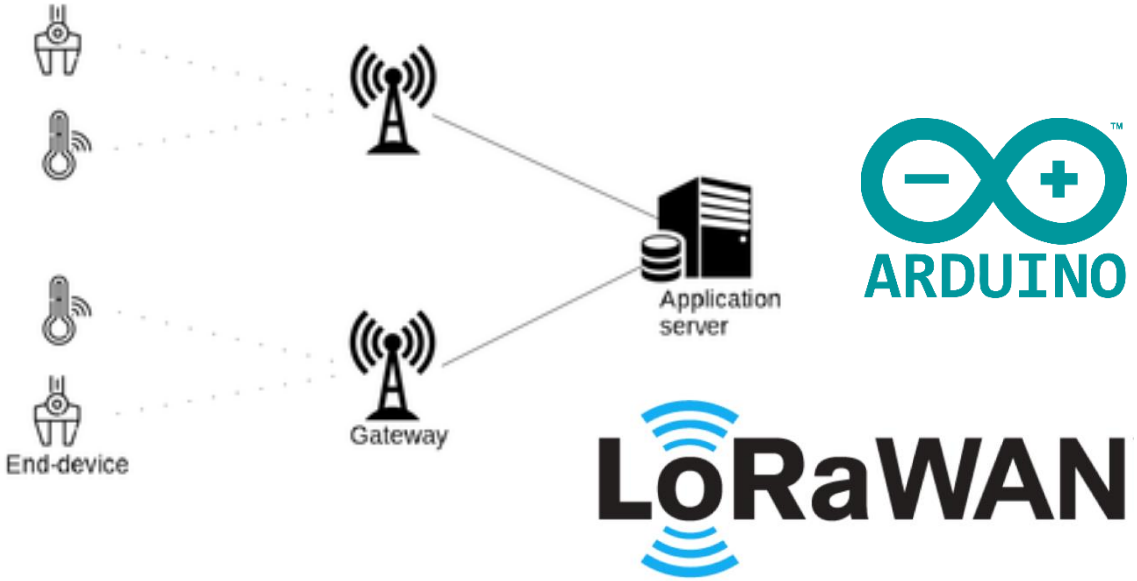
## Description :

VR project developed with Robin Malmasson and Eurydice Ruggieri for the "Virtual Reality" course of Cédric Fleury. This whole project was centered around the thematic of "Data Visualization". Our objectives were to make a good use of virtual reality to simulate a crash room and to find innovative ways to visualize data in a 3D space.

# Seeduino – Internet of Things

*Fev. 2020 – Mar. 2020*



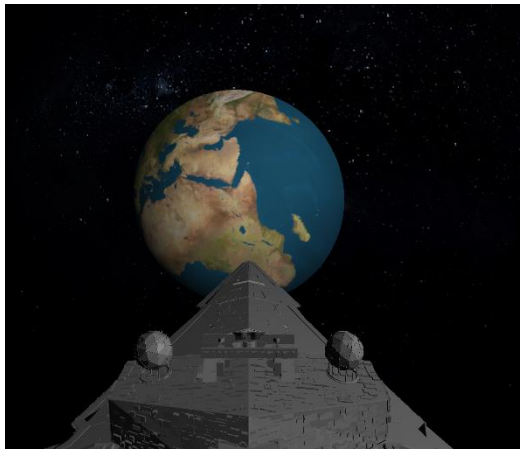
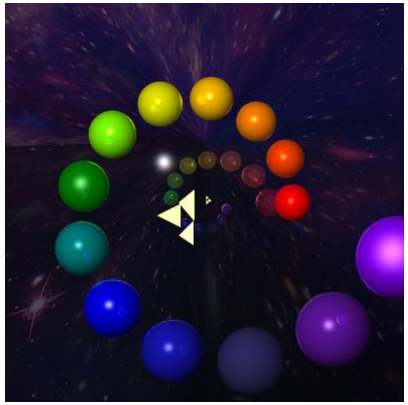
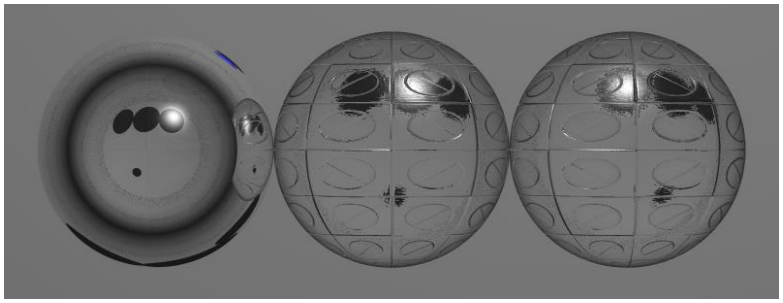
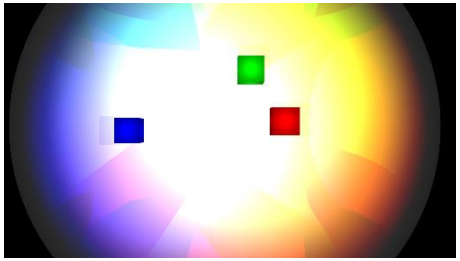
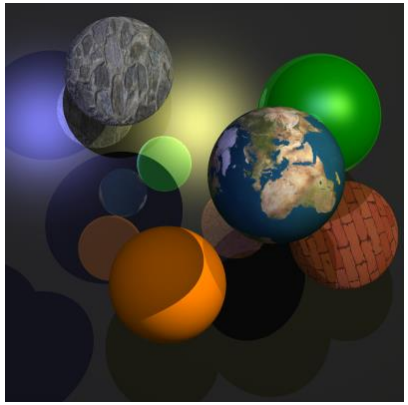
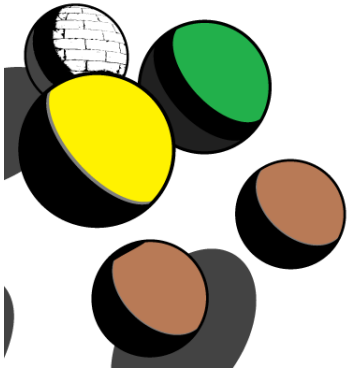



## Description :

Project with Robin Malmasson for the "Internet of Things" course of Laurent Nel. Our objective was to create an end to end line from the Arduino's captors to its processing by a server. To make it realistic, we tried to minimize the traffic by using Lorawan signal and Google's Protocol Buffer to transfer minimal-sized data from the Arduino to the server.

# C++ Raytracing Framework

*Oct. 2019 – Jan. 2020*

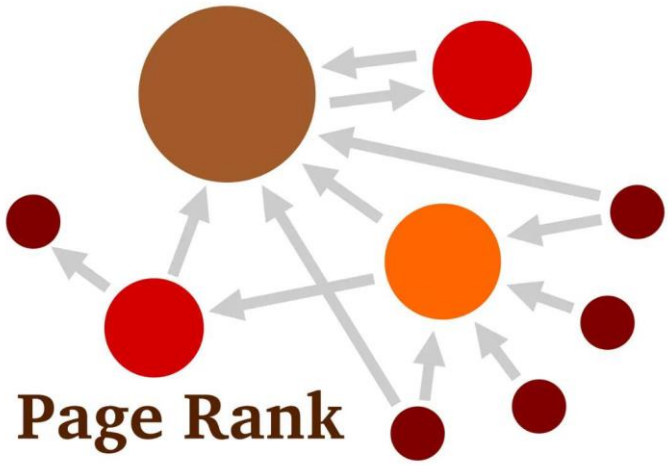







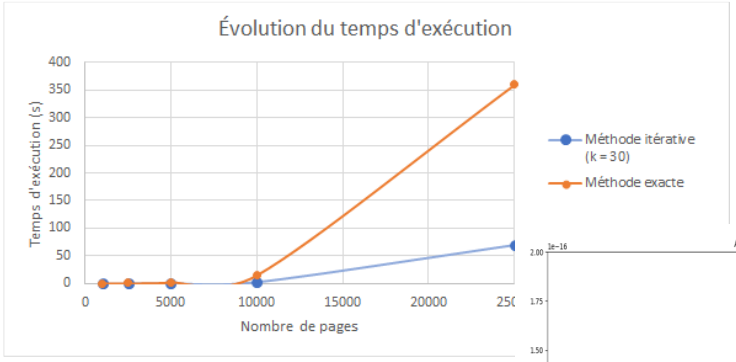

## Description :

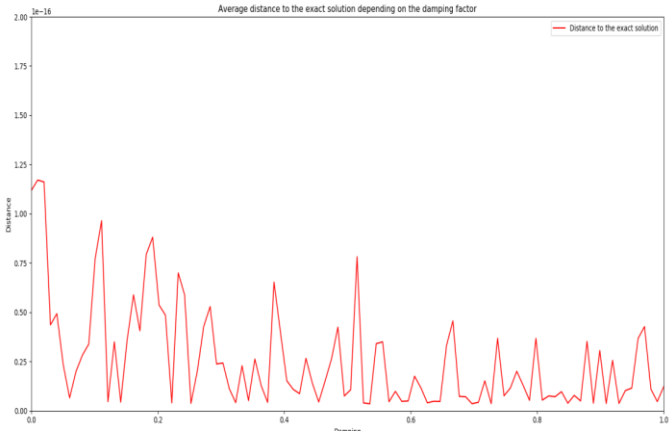
Raytracing project developed with My-Linh Ho for the "Advanced Graphics" course of Tobias Isenberg at Polytech Paris-Sud. The purpose of this project was to discover the raytracing process in graphics and its differences with the classic "shading" graphics programming.

# Python PageRank

*Oct. 2019 – Dec. 2019*



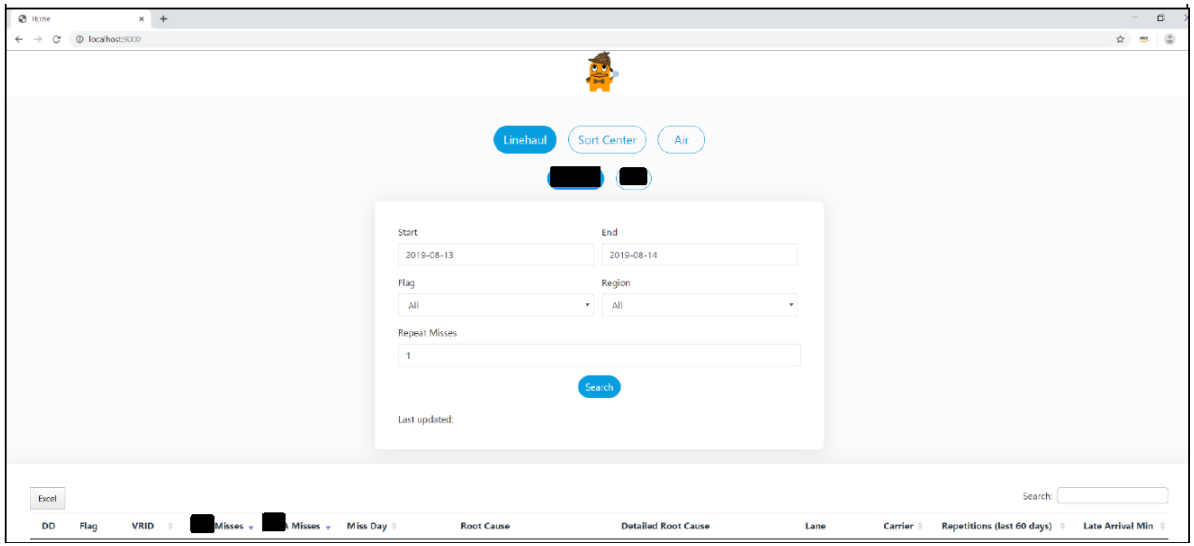




## Description :

Data Science project built with Robin Malmasson. In this project, we implemented Google's PageRank algorithm in Python in order to analyze it. The interest of this analyze was to apply Data Science's methodology and to understand that every ranking algorithm has flaw and biases (that we can find thanks to data science analysis).

# Amazon Miss Monitoring Tool

*May 2019 – Sep. 2019*

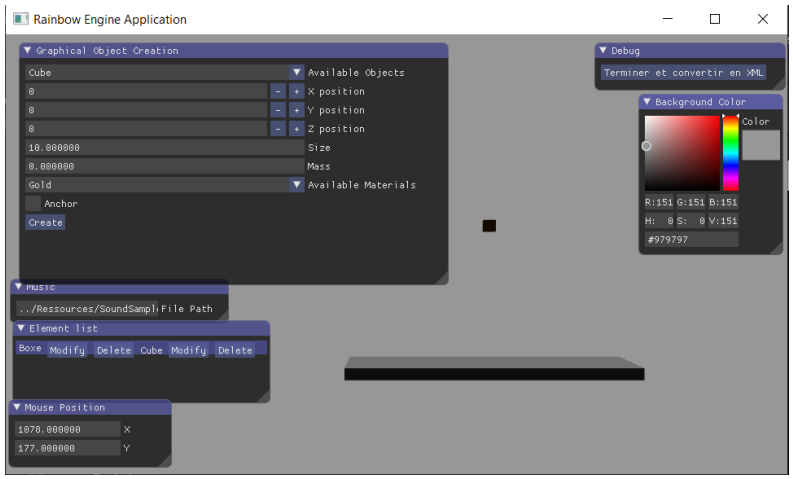



## Description :

Project built during my 4-month internship at Amazon EU. This software was a monitoring platform to report transportation misses in Amazon's Logistic. This was my first full-stack experience as I was fully in charge of the project. This project also gave me a lot of experience with AWS (as I built it in AWS).

# Rainbow Engine

*Jan. 2019 – May 2019*

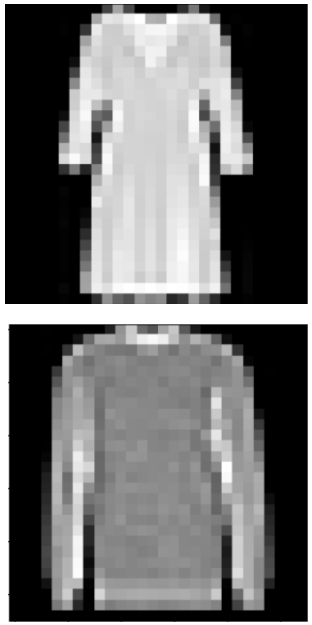


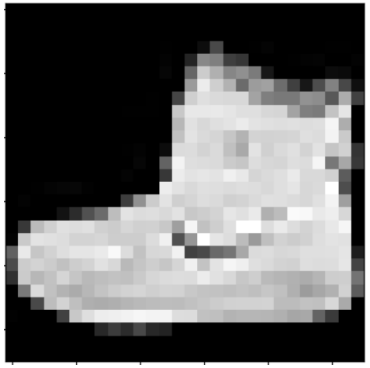

## Description :

3D Engine built with 4 people. This OpenGL-based engine supports all the basic features of a game engine : 3D Graphics/Rendering, Sound Management (OpenAL), Physics, Level Editor, etc. The main goal here was to test our skills (technical and management) with a complex software to develop. The main guideline was to abstract things as much as possible for the user in order to make the engine easy to use for beginners.

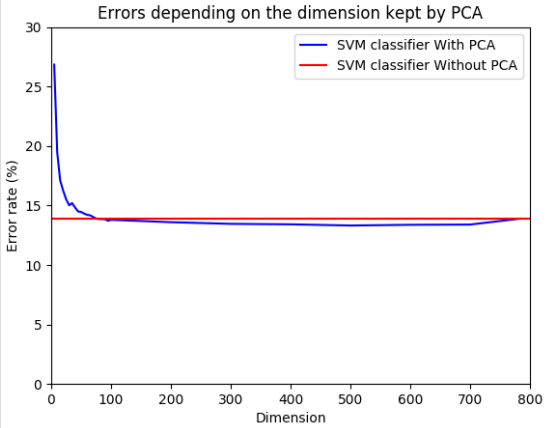
# Python Image Recognizer

*Jan. 2019 – Feb. 2019*





```
def DistMin(PCAtraining, PCAdev) :

    #defining our start time
    start_time = time.time()

    # Defining our classes
    class0 = PCAtraining[trainingLabel == 0]
    class1 = PCAtraining[trainingLabel == 1]
    class2 = PCAtraining[trainingLabel == 2]
    class3 = PCAtraining[trainingLabel == 3]
    class4 = PCAtraining[trainingLabel == 4]
    class5 = PCAtraining[trainingLabel == 5]
    class6 = PCAtraining[trainingLabel == 6]
    class7 = PCAtraining[trainingLabel == 7]
    class8 = PCAtraining[trainingLabel == 8]
    class9 = PCAtraining[trainingLabel == 9]

    # Centroids of classes
    avg0 = np.mean(class0, axis=0)
    avg1 = np.mean(class1, axis=0)
    avg2 = np.mean(class2, axis=0)
    avg3 = np.mean(class3, axis=0)
    avg4 = np.mean(class4, axis=0)
    avg5 = np.mean(class5, axis=0)
    avg6 = np.mean(class6, axis=0)
    avg7 = np.mean(class7, axis=0)
    avg8 = np.mean(class8, axis=0)
    avg9 = np.mean(class9, axis=0)

    avg = [avg0,avg1,avg2,avg3,avg4,avg5,avg6,avg7,avg8,avg9]

    #Compute the learning time
    learn_time = time.time()-start_time
    print('\tLearning time : ' + str(learn_time) + ' sec')


    start_time = time.time()

    #We try to guess the classes of our dev images
    classifierDevLabel = np.zeros(devLabel.shape)

    #For Each image...
    for i in range(0,devLabel.shape[0],1):

        squareDist = np.zeros(10)
```




## Description :

Project developed with Eurydice Ruggieri for the "Machine Learning" course of Claude Barras at Polytech Paris-Sud. This project is a program that learns how to recognize from low resolution images different types of clothes. The aim of this project was to implement different classifiers and compare their performance.

# Console++ Age of War

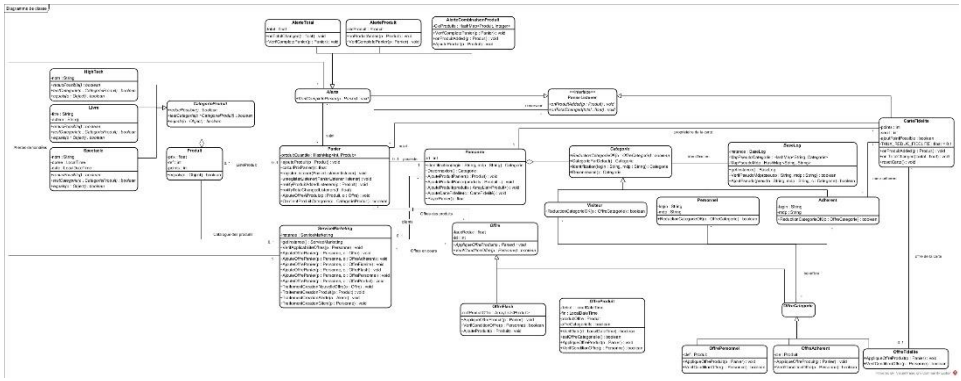
*Dec. 2018 – Jan. 2019*


## Description :

Project developed with Eurydice Ruggieri for the "Object-Oriented C++" course of Emmanuelle Frenoux at Polytech Paris-Sud. The aim of this project was to create an enhanced version of the Age of War game for the console using C++.

# La Fac

*Oct. 2018 – Dec. 2019*



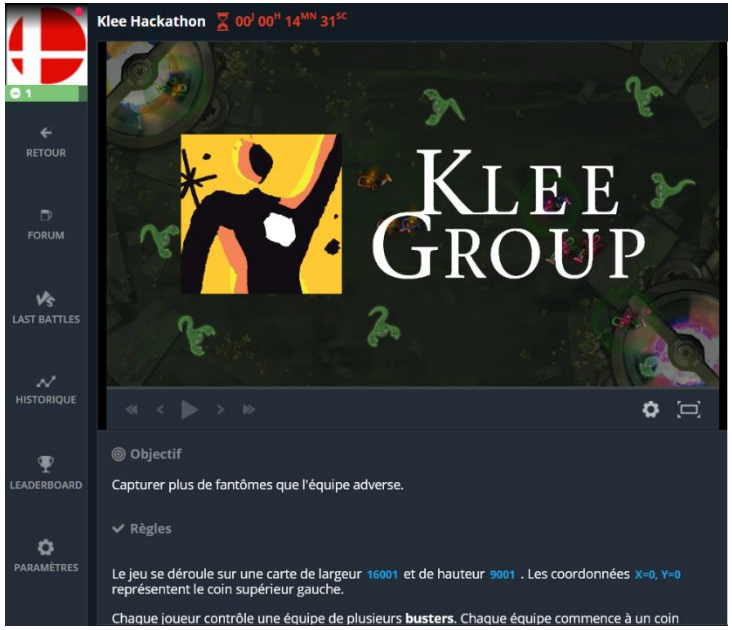
```java
package laFac;

import java.time.LocalDateTime;

public class _Application {

    //Methode qui initialise l'application et effectue les tests fonctionnels
    private static void _INIT() {

        //INIT de la BD des login/MdP
        BaseLog.AjoutePseudo("Murphy", "123456",new Personnel("Murphy","123456"));
        BaseLog.AjoutePseudo("Frederic_Voisin_LRI", "ADA_ForEver!",new Adherent("Frederic_Voisin_LRI","ADA_ForEver!"));


        //Init de l'application avec quelques entrees

        //On va partager un meme contenu pour 2 produits differents
        Livre l4 = new Livre("Foreigner", "C.J. Cherryh");


        Produit finaleCDM=null;
        Produit livreCapital=null;
        Produit livreCompil=null;
        Produit livreAda=null;
        Produit livreAliens=null;
        Produit livreAliensCollector=null;
        Produit ecran=null;
        Produit spectacleDrole=null;
        Produit spectacleTragique=null;

        try {
```

## Description :

Project developed for the "Advanced Object-Oriented Programming & Design Pattern" course of Frederic Voisin at Polytech Paris-Sud. The aim of this project was to create a fully modular system and to get experience with the implementation in Java of some design patterns. The system was the Java Back-end and API of a purchasing center (like Amazon or E-Bay)

# Klee Group Hackathon

*Oct. 2018*

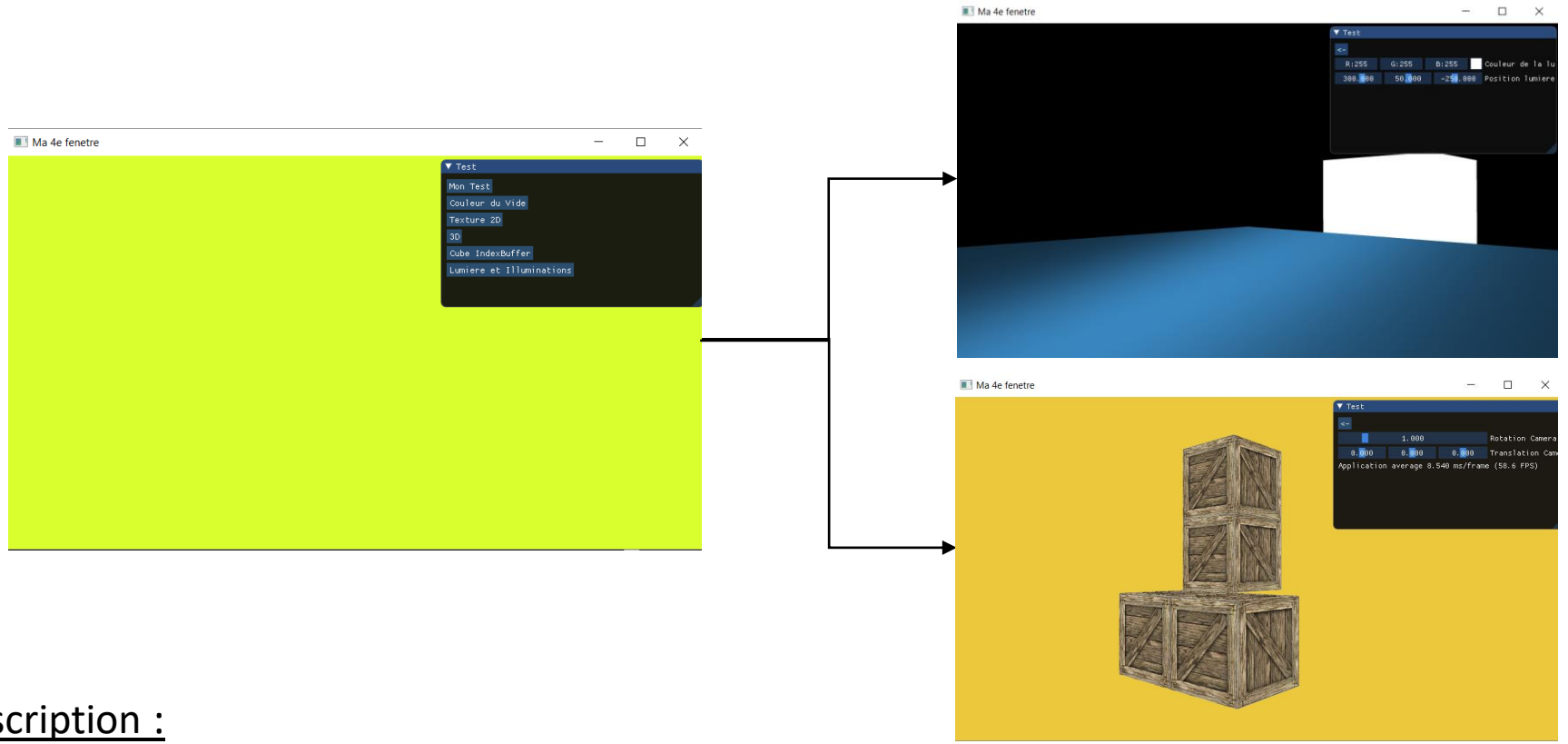




## Description :

Hackathon organized by Klee Group. The event was organized on the CodinGame platform for teams of 4 people. The objective was to program an A.I. for a "ghostbuster" game. It was a worldwide competition opened to both students and professionals. It was my first hackathon and we ended up getting ranked 67th/116 in France.

# OpenGL Testing Framework

*Sep. 2018 – Oct. 2018*

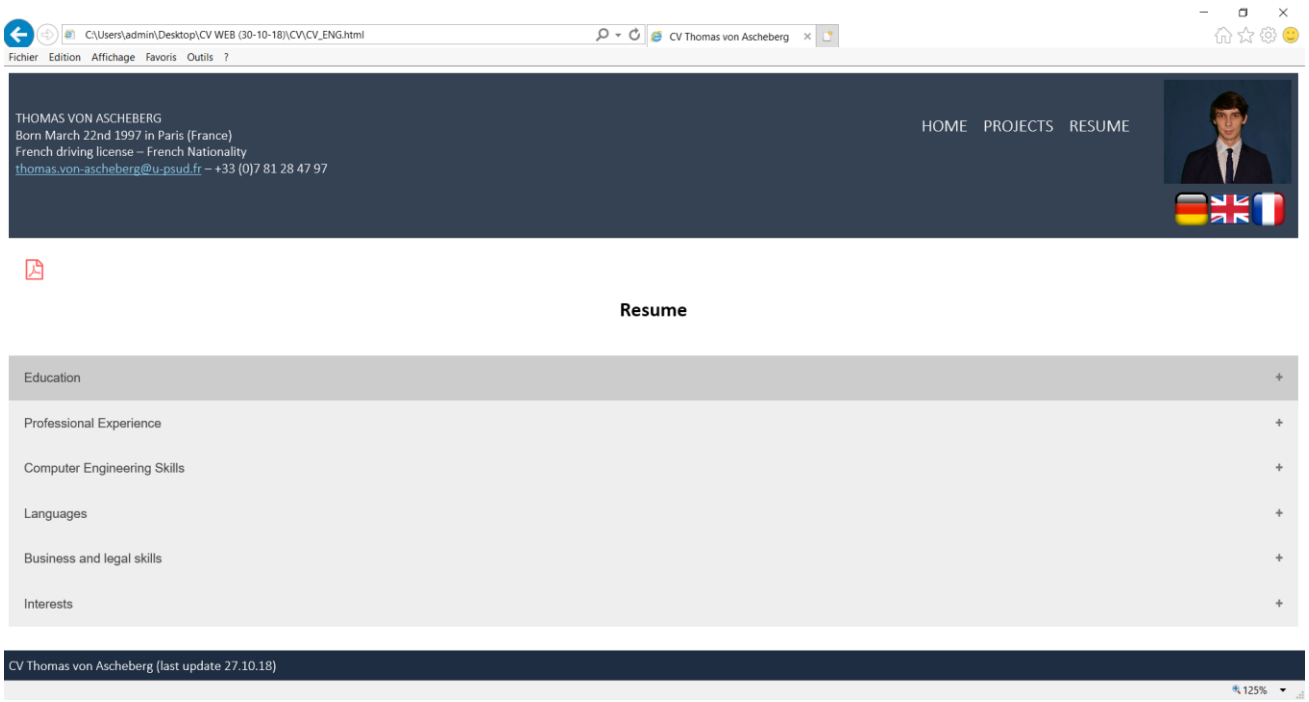



## Description :

Personal project developed in C++ during fall 2018. This is an application that allows the user to create small OpenGL applications very easily. This project is a sandbox to test OpenGL code before implementing it in my 3D engine project (Rainbow Engine).

# Web Resume

*Jul. 2018 – Aug. 2018*

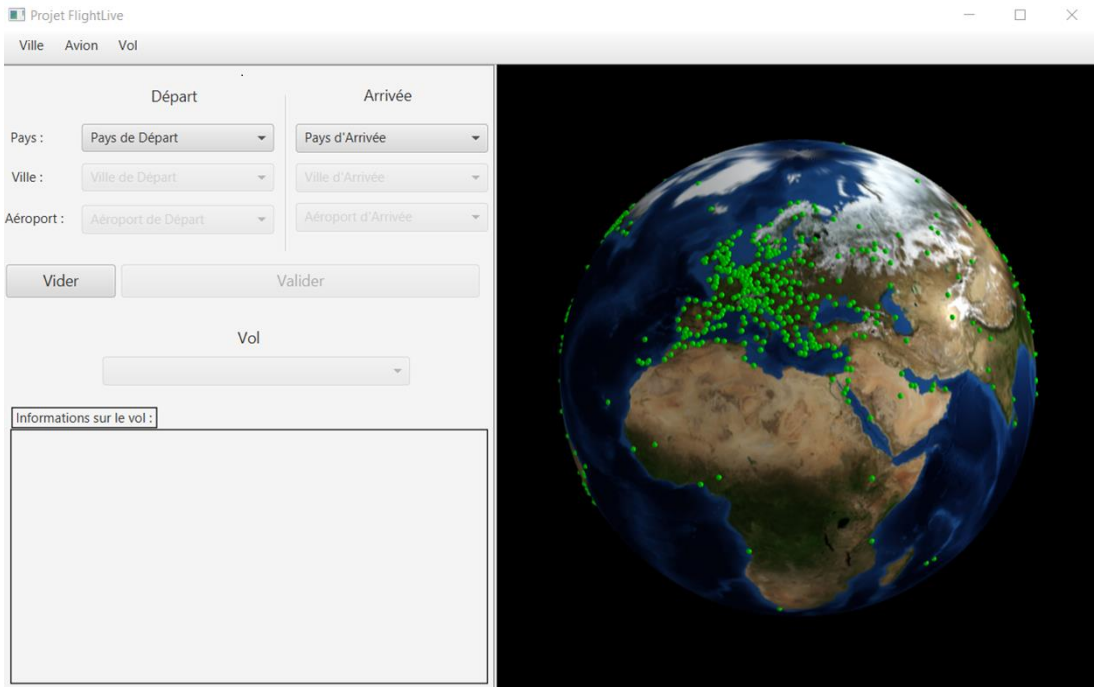



## Description :

Personal project developed during summer 2018. This is an interactive Resume/Portfolio. My goal for this project was to deepen my web programming knowledges.

# FlightLive

*May 2018 – Jun. 2018*

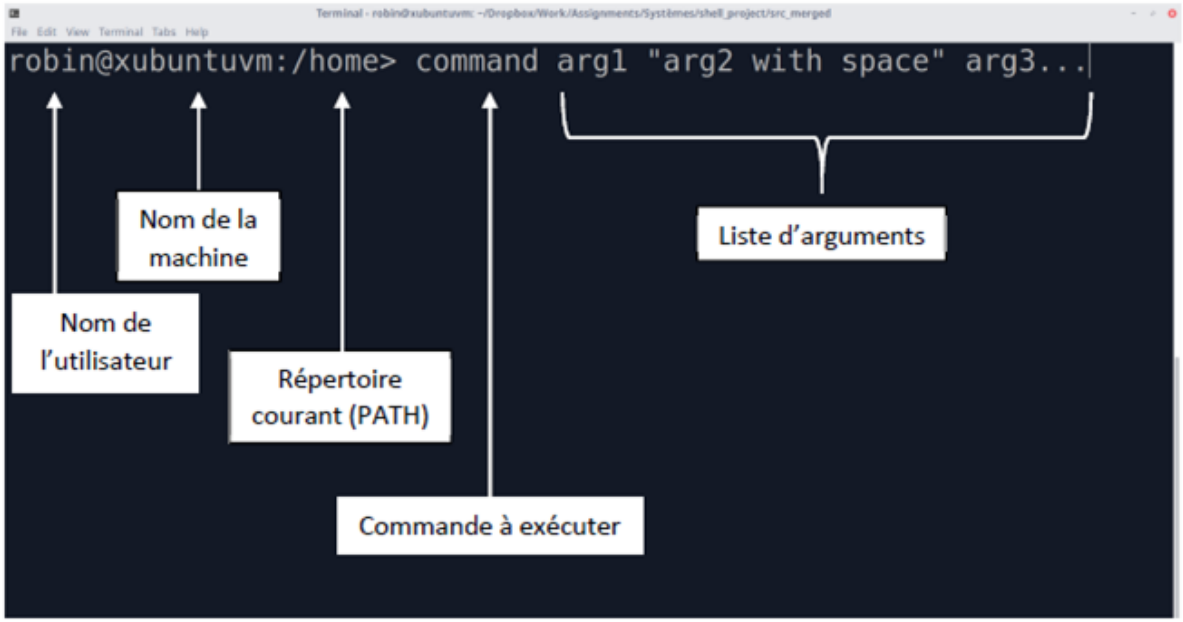



## Description :

Project developed in Java/JavaFX with Alexis Proust as part of the "Human-Computer Interaction" course of Cédric Fleury at Polytech Paris-Sud. This application allows to consult in pseudo-real time the list of current flights in the world according to what the user wants.

# Unix Shell

*May 2018 – Jun. 2018*




## Description :

Project developed with Robin Malmasson as part of the "Operating Systems" course at Polytech Paris-Sud. The development was done in C in an Unix environment. The aim of this project was to create a fully functional Unix Shell with all its specificities (redirections, pipes, etc.)

# Matrix ReAnimation

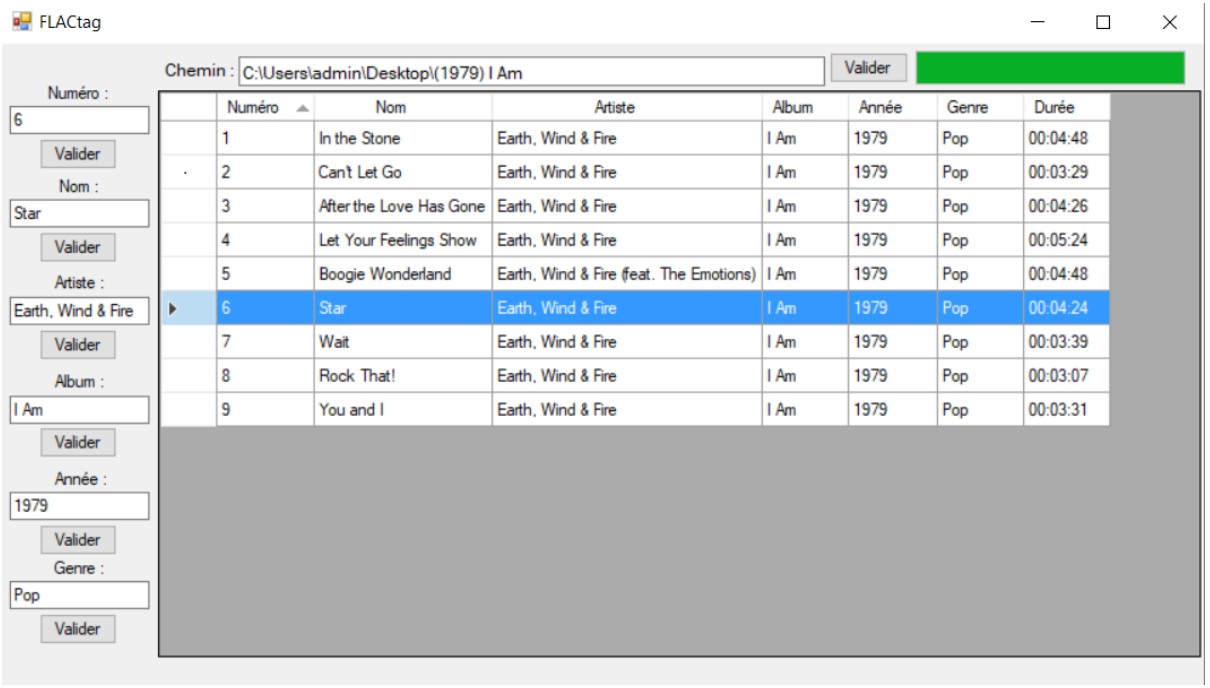
*Dec. 2017 – Jan. 2018*


## Description :

Project developed with Robin Malmasson and Eurydice Ruggieri as part of the course "Introduction to Computer Graphics" of Tobias Isenberg at Polytech Paris-Sud. The project was developed in C++. In this project we tried to reproduce, as closely as possible, the famous Matrix bullet dodge scene with OpenGL. It was awarded in a competition organized by INRIA.

# FlacTag

*Jun. 2017 – Aug. 2017*

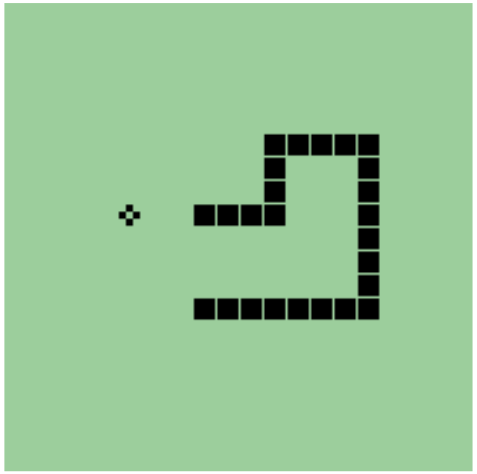


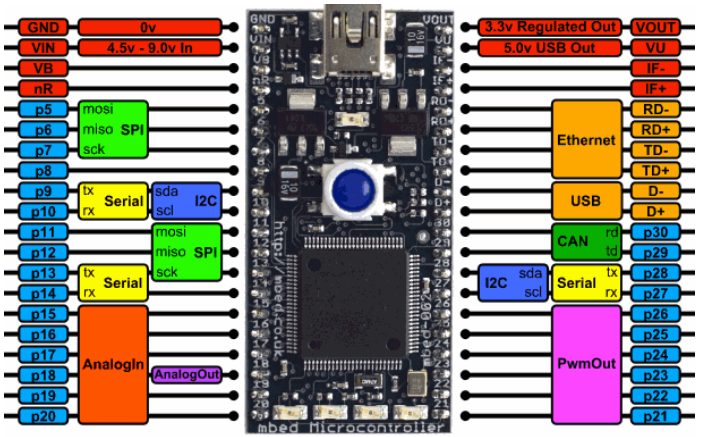

## Description :

Personal project developed during the summer of 2017. This project is a small utility for processing FLAC files. The main goal of this project was to discover the .NET framework and the Visual Basic programming language. It is inspired by the MP3Tag free software.

# Mbed Snake

*Mar. 2017*



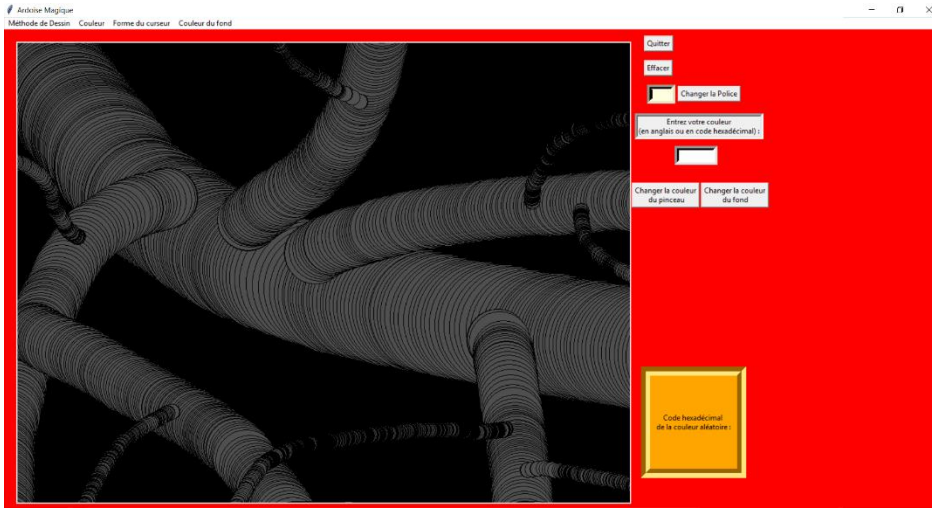



## Description :

Project developed in C for the "Industrial Computer Science" course at Polytech Paris-Sud. This project is a small "Snake" game developed on an Arm'mbed NXP LPC1768 board. It was my first contact with embedded systems and their constraints.

# Python Drawing Board

*Jun. 2015 – Aug. 2015*

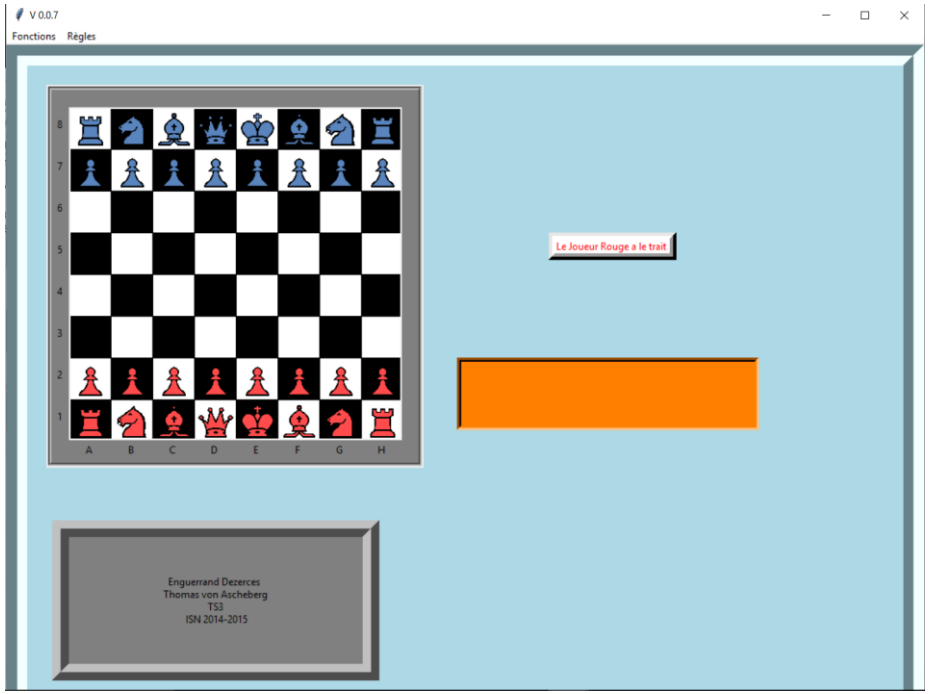




## Description :

Personal project developed during the summer of 2015. This project is a small drawing software. The main goal of this project was to test my python skills at the moment and to improve my programming knowledges.

# Python Chess

*Dec. 2014 – Jun. 2015*




## Description :

Project developed in High School with Enguerrand Dezerces as part of the "Computer and Digital Sciences" (ISN in French) Baccalaureate exam. This project was my first programming experience. The goal of this project was to program a classic chess game (with all the official rules).