



## Games Portfolio

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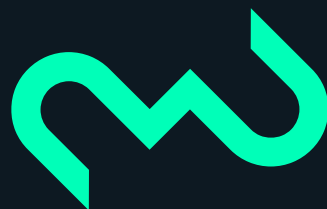
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**Triumphus Temporis**  
January 2020 - September 2020

01





# TRIUMPHUS TEMPORIS

## Triumphus Temporis

### About the project

Triumphus Temporis is a VR experience I developed in 2020 as a Bachelor's Degree thesis project.

The experience, based on Petrarch's *Triumphs*, is a fusion of different disciplines: Psychology, Thematic Apperception, Computer Science and Design.

With the help of my thesis co-supervisor, Professor, and Psychologist Dr. Antonio Chimienti, I had the chance to develop an immersive experience which, through complex algorithms, monitors the player's behavior and makes use of the data to automatically conduct a thematic apperception test.

A complete play through of the experience is hosted on YouTube [at this link](#).

### The idea

The theme to follow during my last academic year was "Time", and I knew from the very first second I tried Virtual Reality that my dissertation project would've been an interactive and immersive experience.

During my research time span, my grandfather called me, and suggested me to take a look at Petrarch's *Triumphs*, which was the spark that lit up the project.

I decided to give new life to a literary work of art, re imagining it in a modern style. And to not make the experience predictable and monotonous, while at the same time implementing my passion for data and behavioral patterns, I chose to develop an algorithm to analyze people's movements, decisions, and reactions, conducting a psychological test during the game. Results of this test are then given back to the player.

I like to describe Triumphus Temporis as an operative artwork, designed and built inside the virtual reality, so impossible to mutilate or decontextualize, which through the aptitude profiling of the user with a thematic apperception test promises to raise awareness and educate to the beauty of a work that would otherwise be drowned by the fame of others.

## Triumphus Temporis



### Design Conceptualization

After a long period of trying different art styles, the choice fell on the Cyberpunk one. This decision was heavily inspired by Cyberpunk 2077's aesthetic and VALORANT teaser trailers. Then, roughly knowing what assets would look like, it came time to design the narration and progression of the experience. Stories from the Triumphi would've been told by Laura, the woman Petrarch loved, through objects which belonged to characters mentioned in the opera.

I chose such objects thinking of the different ways the user would've been able of interacting with them, for example: Shooting Ulysses bow, stabbing Caesar's mannequin, and crossing Romolo's sacred soil.

As each of Petrarch's Triumphi was narrated in a different chapter in his written work, I have decided to simply divide the above objects in different rooms, each visually and metaphorically symbolizing a different triumph.

For example, Fame's room is luxurious and bright, while Death's garden is a dynamic ambient that changes based on player decisions, causing all the life inside it to freeze.

## Triumphus Temporis



## Triumphus Temporis

### Technical Realization

The engine used to realize Triumphus Temporis is Unity. The main language used to program the experience is therefore C#.

The experience has been developed using the Oculus Quest Virtual Reality Headset, allowing me to carry the experience with me for people to try out at events and occasions. The framework I used as a foundation to build the VR physics is VRIF (Virtual Reality Interaction Framework).

There are several aspects I am proud of about this project, for example:

The different objects I modeled and textured needed different hand poses to be grabbed and interacted with, and I have realized all the necessary poses, one by one.

The behavioral analysis algorithm, which takes lots of different factors in consideration, such as which room is visited first, what decisions are taken and how long it takes for the player to take them.

The decal projection on the Caesar's Chiton, which I realized in Marvelous Designer, used to simulate the stabbing aftermath wherever the player decides to place the dagger.

Laura's voice, which has been carefully dubbed by jadevoiceovers to immerse the player in the experience.

The game mechanic I am most proud of, though, is the Bow and Arrow placed in Shame's Room. It has been very challenging and stimulating to recreate the ballistics of an arrow in a such small setting.

**One Way Ticket**  
January 2021 - Present

02





# One Way Ticket

## One Way Ticket

### About the project

One Way Ticket is a side scrolling 2D Metroidvania, led by strong narrative and thoughtfully curated lore, resulting in a fun and dynamic experience.

You'll play as Mia, a stubborn eight years old girl with a love for Sweets and Treats. Mia won't be alone for long in this adventure though, as she will soon find herself side by side with Mooncake, a soft and sticky marshmallow creature.

The game is set in a fantastical world, born as a defense mechanism inside Mia's head, who is subject to large amounts of stress in the real world. Part of this stress comes from solitude, as her parents often leave her with babysitters because of their work, but the biggest amount is due to the need of moving to another country for the new job position one of her parents landed.

A demo of the game is available for PC [at this link](#) and for MacOS [at this link](#).

The development of this project is carefully documented on Twitter [at this link](#).

### Game concept and mechanics

The team behind One Way Ticket is composed of two people, Letizia Fabeni and I. While Letizia handled everything regarding Lore, Narrative and Art, I managed everything about technical implementation, game programming, marketing and production. Together, we developed the game design document and currently work on level and gameplay design.

This metroidvania has several platforming aspects which all the dynamism and frenzy come from. This fast paced game has been conceptualized to be enjoyed by both lore and narrative lovers, as well as speedrunners, game perfectionists, and collectors.

In fact, the large amount of attention paid to the character's movements and exploration possibilities allow for countless level design and narration ploys.

We are proud of this game concept as it has received a great response and feedback from the community we've built on Twitter.



## One Way Ticket

The game begins in Sweetzerland's airport. So called because Mia, whose still in the process of learning English, loves to think of Switzerland as a place full of sweets. All the game world is narrated through such epithets, like The Big Apple, The Windy City, etc. which will become literal places in this fantastical world: a village carved in a giant apple and a city drifting through unstoppable winds.

The core mechanic of the game is shooting Mia's slingshot, which she loves to use both in the real world and in the one inside her head. This mechanic is not only useful to fight your way through different bad creatures, but it also represents the game's most important movement mechanic.

In fact, it is possible to use the slingshot to shoot Mooncake on walls and on the ground, allowing Mia to use him as a bouncy trampoline to reach higher places.

Another aspect I am really proud of is our power-up system, which is creative and innovative. As Mia, you'll find different enamel pins, which roughly resemble Tetris shapes. These pins can be rotated and attached on a patch situated on Mia's backpack. The more you can fit, the more power-ups you'll unlock!



## One Way Ticket

# Infrastructure and development

I am a firm believer of the potentialities of this game idea, and that's why I have decided to spend a lot of time developing a solid foundation of tools to build the game with.

The game features a serializable save system and several serialization surrogates which allow for the saving of pretty much every kind of class, type and interface.

Besides that, the game features a State Machine AI situated in the little smokey creatures we call Frighties, as they metaphorically represent Mia's fright. I have learned about this Game Programming Pattern in Robert Nystrom's homonym book. I have applied lots of these patterns in One Way Ticket, but the most useful one in my opinion has been the Observer one, used to keep track of game flow and trigger events and scene changes when peculiar actions are performed.

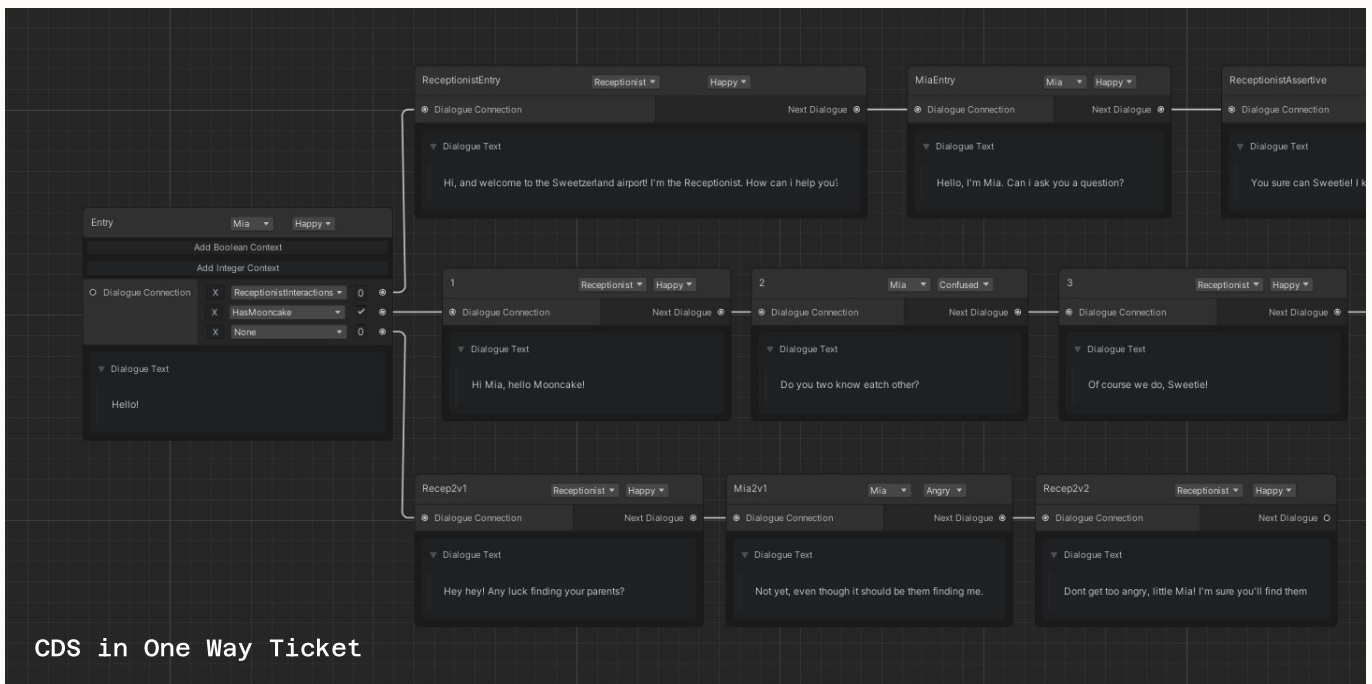
One more use I've made of the observer pattern is in what I like to call the "Game Archives". A collection of serializable dictionaries used to keep track of everything the player does while playing, for example: how many times has the player spoken to a certain character? How many shots has the player shot? Is the slingshot unlocked in this save file?

Having a reference to all of these different values has been very important from the beginning for me, as I knew I wanted to craft a deep and surprising dialogue system for One Way Ticket.

In fact, I have built a brand-new dialogue system tool from scratch, which is now in further development and will be soon available as an open source project. This system is called CDS (Contextual Dialogue System). CDS is a node-based C# tool that allows for the creation of deep and intricate dialogues which automatically pick different lines based on context values. In One Way Ticket, some characters get bothered if you talk with them too much, or might tell you some secrets if you have done a certain thing!

CDS is extremely versatile and even includes the possibility of binding images to character names and emotions. Every character in One Way Ticket has four different portraits for happy, sad, confused and angry emotions.

## One Way Ticket



## Art style and narrative

As previously stated, One Way Ticket is based on narration and lore. Through the use of creative tools such as card sorting and creativity cards, Letizia and I have crafted a complete story, full of details and turning points. With the help of a psychologist friend of ours, we've even analyzed the psyche of an eight years old to understand what they would say or do in scenarios similar to our game's one.

The art style Letizia chose for the game is pixel art, and all sprites and animations have been drawn by hand, pixel by pixel.

Once the style and guidelines were set by Letizia, I have started creating sprites as well, and we then collaborated on the game scene dressing and decorations.

As soon as the game development foundation and art was set, we were just lacking sound design. Since neither me nor Letizia have experience in music composition or sound effects production, we've decided to involve someone else in the project for the game's soundtrack.

Game development is still a young field in Italy, and very few people know about

## One Way Ticket

the amazing professions in it. Furthermore, young adults, who typically love video games and interactive experiences, have almost no clue on how these things are made.

Thanks to an interested professor, we had the chance to present One Way Ticket to a Musical Lyceum in southern Italy. Ten brilliant and talented students decided to get involved in the production of One Way Ticket's soundtrack, and we could not be happier with the results.

You can hear One Way Ticket's main theme [at this link!](#)

We can't wait to further work on this project. We aim to launch a crowdfunding campaign on kickstarter or find for a publisher as soon as we're ready!

CDS in One Way Ticket



**EUPHORYA**

May 2018 / - / July 2021

03



**EUPHORYA**

## EUPHORYA

### About the project

EUPHORYA is a text based game that has the intent to demonstrate the short-term and long-term effects of different kind of drugs on the human brain.

The original game idea for EUPHORYA was first designed in 2018 as an exam in team with a university colleague and friend of mine, Marco Preti, who came up with the different riddles and enigmas to solve in the game. I handled the technical development and production of the game.

We originally thought of creating three different sections for three different kinds of substances, but due to our time being limited we only managed to implement two, leaving one in a “Coming Soon” state.

Three years later, I decided to wrap up the project creating the third and last section, debugging the whole game, and optimizing code with the competences I matured in the meanwhile.

As stated at the beginning of the game, EUPHORYA is born with the purpose of shining a light on the bad effects of drugs on the human brain and body. Drug consumption is in any way discouraged and to be avoided at all cost.

EUPHORYA can be downloaded for PC [at this link](#) and for MacOS [at this link](#).

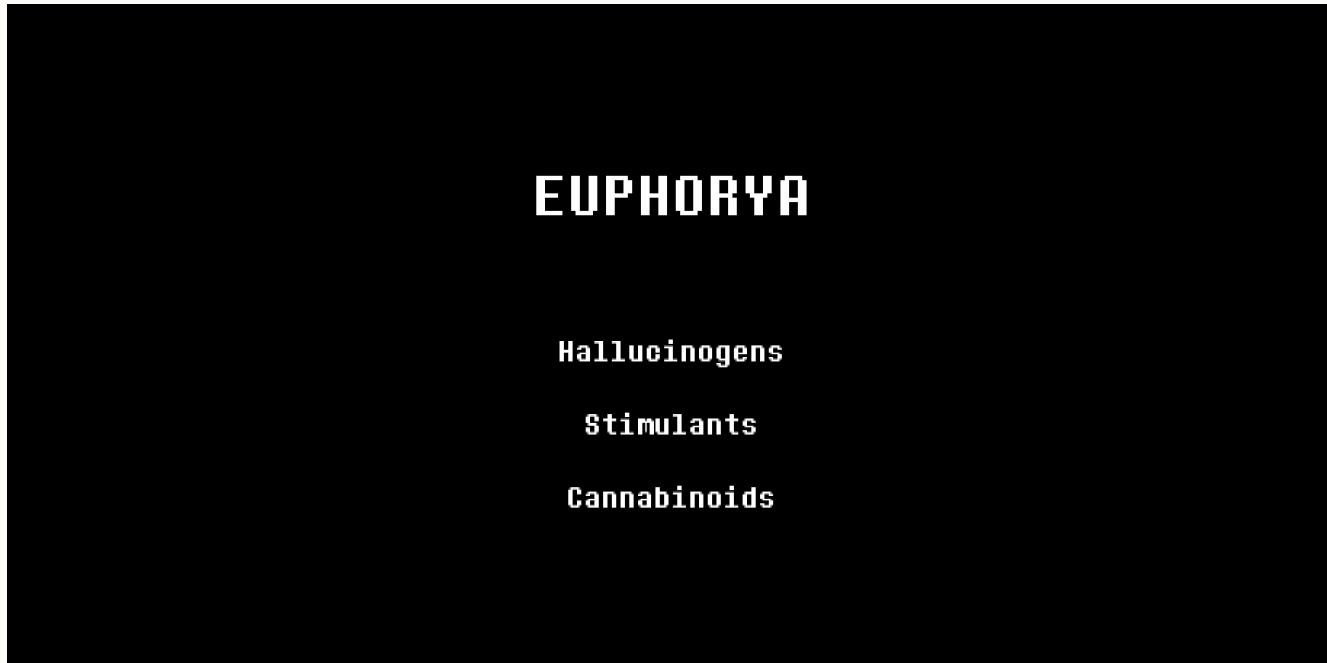
### The informative experience

When initially shaping out the idea of talking about drugs and altering substances as a team of teenagers, we felt the need of stressing the seriousness and depth of our research. We had the objective of crafting an informative experience that could make the user understand the effects of different categories of substances through very difficult riddles and mini games which, once solved, would be remembered as clever and complex.

We carefully researched every different category of drugs and their effect on humans in short, medium and long term. Every category has in fact three riddles with increasing difficulty to solve.

## EUPHORYA

We've decided to make use of complexity and intricacy to create a process of association in the brain of the user, resulting in a negative feeling of frustration and confusion in regard to drugs and altering substances.



## UX Design

Behind EUPHORYA is a really deep User Experience research that led us to understand how profound and real the harm drugs can represent is.

We felt insecure about the development of this project but soon translated this insecurity in the need of educating and raising awareness about these facts on other teenagers and young adults.

After realizing a large amount of assets, such as surveys, interest feedback, context assessments, graphs and mind maps, we landed on the idea of streamlining the experience to mere text.

We figured out that by simplifying the experience we would increase the memorability of our project and maximize the chances of educating the user.



## EUPHORYA

This game was first produced in 2018 as an Interaction Design exam at Quasar Institute for Advanced Design by Giorgio Perri as the game developer and Marco Preti as the concept artist and copywriter.

The institute asked us to update the project several times for showcasing purposes, hence the need for version control.

In September 2021, the game was largely updated by Giorgio Perri with the purpose of creating a game programming portfolio, resulting in version 2.0.0

As young adults who are largely exposed to the world of drugs and alcohol, we decided to try and raise awareness on this really delicate subject.

We strongly discourage not only young people, but everyone from consuming drugs or alcohol, and we strongly advise everyone to never feel guilty or ashamed about asking for help if needed.

Some useful numbers:

USA: 866.235.4572  
Italy: 800.189.433  
UK: 0300.330.0659

It's never too late to save your life and the one of people around you.

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Levels in EUPHORIA do not simply represent your progress in the game. Each of the three levels relatively represent a short, medium, and long term usage of the selected drug category. Levels drastically increase in difficulty, and every third level contains a trick that will make you lose all progress.

Pay extra attention to those and if you get frustrated, remember: that's what drugs do to your brain.

## Text-based game realization

EUPHORYA is entirely realized in the Processing language, derived from Java. It consists of a bare total of a thousand lines of code and every text effect, shape and animation is realized inside the same Processing file. The only external assets used in the game are the text font and the sound effects.

This has been the first game I realized without the use of a game engine. As challenging as it has been to realize, it rewarded me with great improvements in Object Oriented Programming and team working.

# Blind Faith

Autumn 2022

04



*Blind Faith*

## Blind Faith

### About the project

Blind Faith is an atmospheric first-person horror puzzle game set in a technologically corrupted Victorian age, developed as an exam project for the Making Games Autumn 2022 course at the IT University of Copenhagen. The player wakes up in a church which has been repurposed as a lab for all sorts of sinister experiments in the light, and they must manipulate the light to solve environmental puzzles and piece together what has transpired.

Blind Faith was developed in collaboration with a set of wonderful people.

Kristian Kirk Deichmann – Game Design Lead

Thomas Brejning Carnell – Producer

Felix Möller – Programmer

Rafal Artur Pych – Programmer

Giorgio Perri – Tech Lead

Alex Swiatkowski – UX Designer

The game is free to play and hosted on [itch.io](https://itch.io). It can be easily reached using this link. My written report for the game can be found [at this link](#).

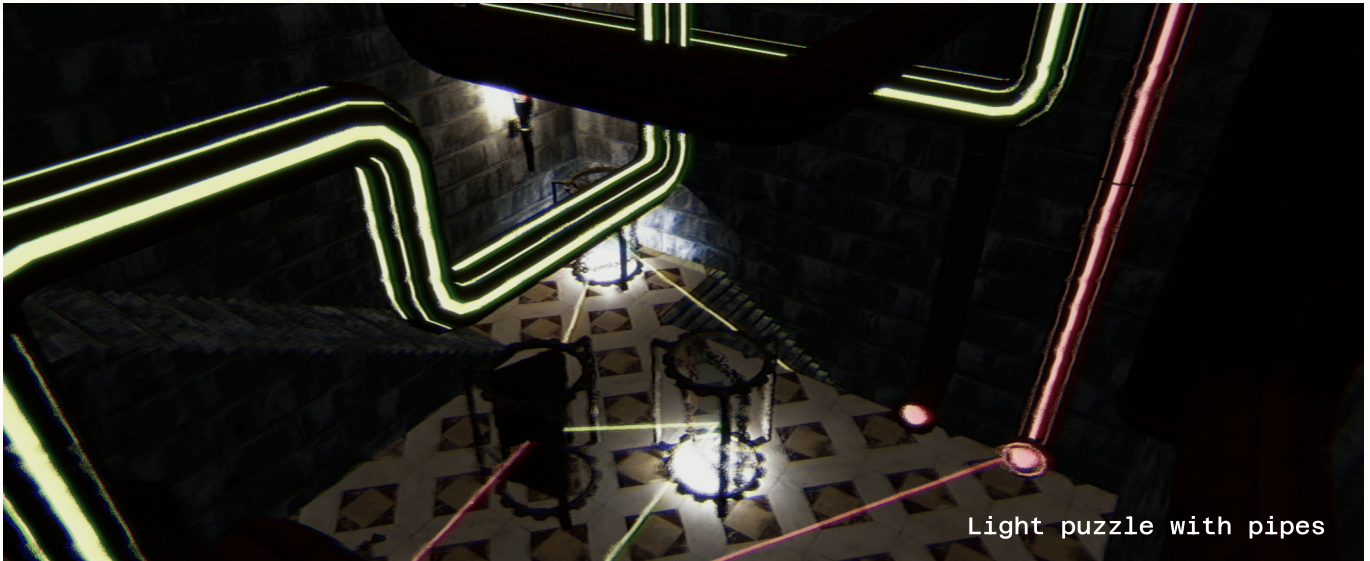
### The WWISE Integration

Thomas Carnell, producer of Blind Faith, has also done an incredible job as a Sound Designer for the game. During the early stages of development, he manifested the intention of using WWISE as a sound engine for the project, and it was my duty as a Tech Lead to ensure the integration with our game engine of choice (Unity) proceeded smoothly.

The initial integration process went very well, but problems started arising when more specific issues had to be tackled. Among other tasks, I developed the subtitle system for Blind Faith. Subtitles are something very dear to me as some of my relatives have hearing impediments. Syncing the audio coming from WWISE and the text in Unity was a challenge, as there is little documentation on how to trigger in-game events from cues in WWISE. Nonetheless, succeeding in this task was very rewarding and appreciated by our Professors and Colleagues.



## Blind Faith



## My Experience as a Tech Lead

We've seen Blind Faith grow from a sketchy blackout prototype to a game that feels deep and complete, and our team grew more secure and cohesive in the process.

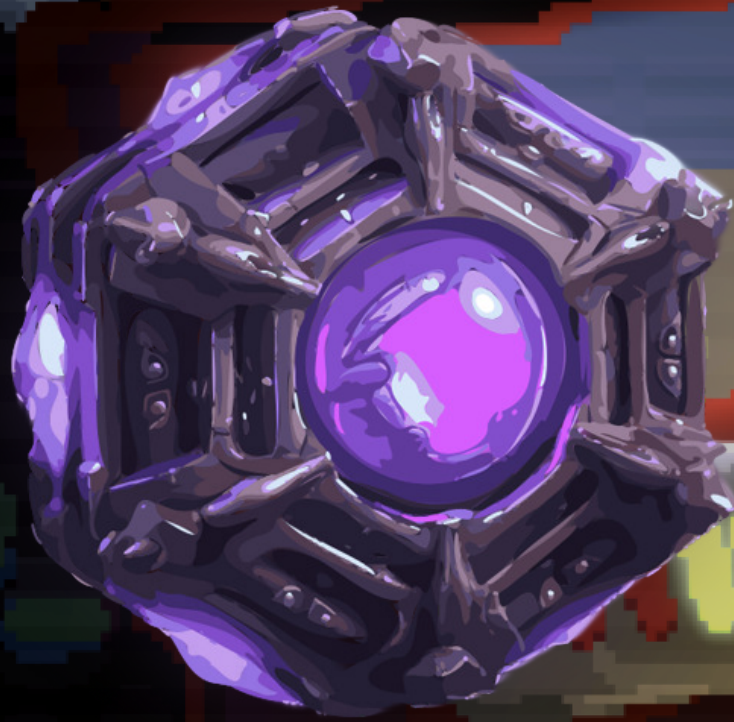
I am enthusiastic to have had the run that I had with Blind Faith, and the result makes up for the hiccups that happened along the way. It was my first time working as a tech lead, and I am proud of the result we've achieved. I am grateful to my team for showing a great attitude and commitment, and for celebrating our milestones together.

I don't want to fall into the trap of believing that every project of my life will be even half as smooth as this one, but the knowledge I acquired during this project will be of great importance for future experiences not only as a technology leader but also as a programmer and team member.

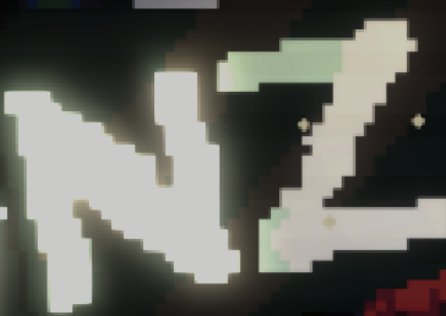
I am aware that the work of a tech lead implies a broad skill set, but this journey has taught me that the most important characteristic of a good leader is that of making their team have *\_blind faith\_* in them, and being a supportive figure from the very beginning of the project, ensuring a secure and protected workspace where progress is as constant as possible, and where tensions, doubts, and frustrations, are minimal but still expected and faced with respect and sensitivity.

**ENSOULED**  
Spring 2023

05



E N S O U L E D



## ENSOULED

### About the project

Ensouled is a 2D action platformer with metroidvania aspects and tightly bound movement and combat. Set in a dystopian future, the storyline follows N1k0, a passenger of the SS. Hominem 03 spaceship, who suddenly regains consciousness years after being forcefully transformed into a cyber-soldier.

This game demo was realized as an hand-in for the Game World Design course at ITU held in Spring 2023 by a team of seven people:

Álvaro Linares Diaz - Narrative & Level Designer  
Clovis Lebret - Programmer & Pixel Artist  
Giorgio Perri - Programmer & Art Director  
Ioannis Maliaras - Programmer & Sound Designer  
Nanna Holst Larsen - Narrative Designer  
Simone Di Blasi - Pixel-artist & Level Designer  
Søren Skouv - Programmer & Project Manage

The game is free to play and hosted on [itch.io](#). It can be easily reached using this link. A written report for the game can be found [at this link](#).

### Modular Character Controller

Early in development, while planning the structure of our project, we came up with the idea of setting up the story starting at a moment in time different from the one the rest of the game takes place in. At the beginning of the game, the protagonist is still entirely human and thus has different capabilities than the ones she'll have from act 2 onwards. The character controller of ensouled was implemented keeping this in mind, and it works in a modular fashion.

The main controller script can be attached with different modules we refer to as “capabilities”. These include basic things like moving left and right, and jumping, but also more peculiar ones, like receiving forces and turning from left to right. The first one's purpose is to easily manage our main source of movement, recoil, while the second one was created to differentiate between turning when the gun is or is not equipped (if the gun is equipped, and the player is aiming to the right while walking left, the character should not turn to the left).



## ENSOULED

## Tailor-made Dialogue System

The implementation core of the system is fairly simple: it is backed by an improved version of Contextual Dialogue System (the node-based dialogue tool I originally built for One Way Ticket). This tool enables everyone to create dialogue lines with no coding involved, and made it possible for the design and narrative part of our team to easily create and iterate over monologues and dialogues.

Dialogues are widely used in our cutscenes, and to have full artistic control over the framing and composition, the dialogue system is implemented with several parameters. Among other things, we can decide if we want the camera to zoom during a dialogue, if controls should be frozen, if the NPCs should turn, and so on.

The other fundamental component of the dialogue system is the UI. The interface modules that compose the dialogue user interface are the speaker name, the text body, and the portraits of the two most recent speakers, along with other imagery added for visual clarity and UX purposes.

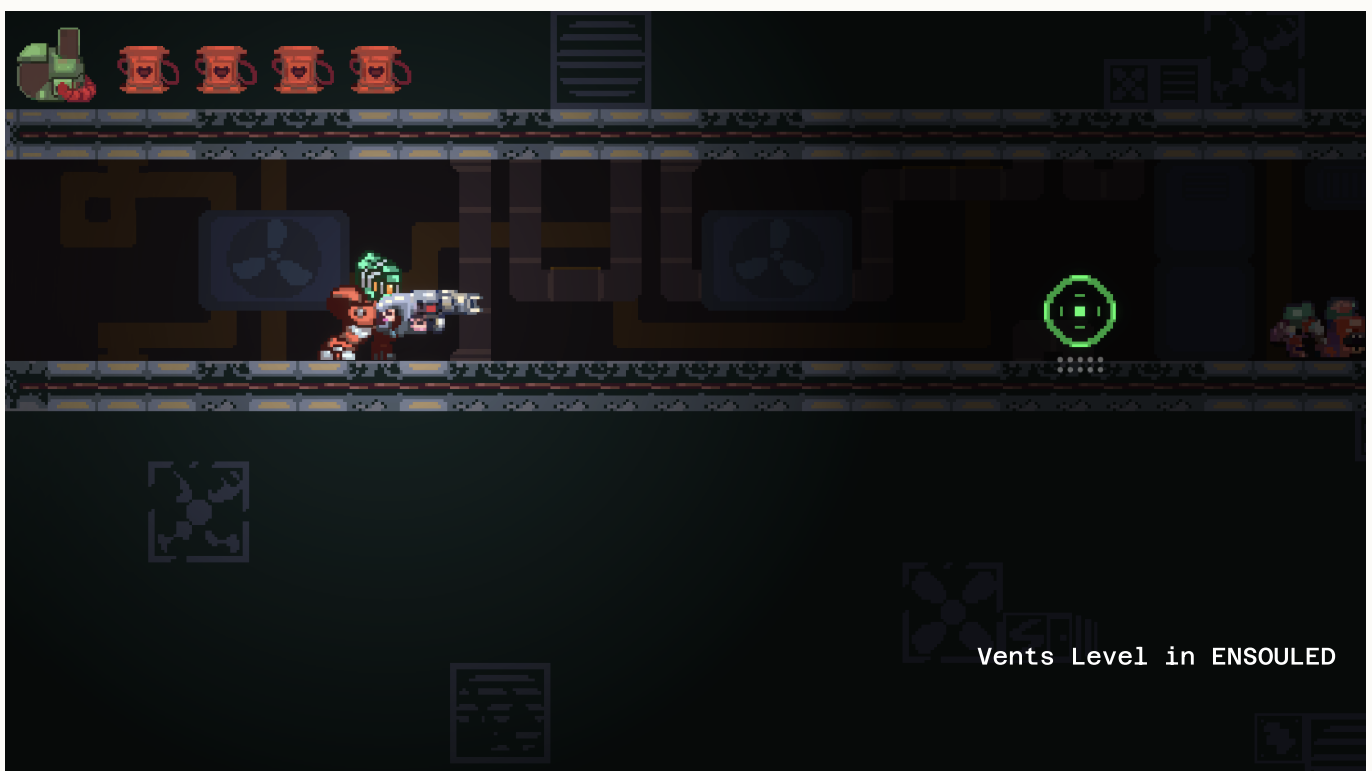


## ENSOULED

## Level Design toolkit (LDtk)

To design levels, we used LDtk (Level Design toolkit), a standalone program to create 2D tile map-based levels. This was decided due to two primary reasons. Firstly, having a separate program instead of Unity Tilemaps which are tightly integrated into the Unity Engine allows the level designer to work almost completely separately from any development that takes place in the engine. Secondly, Unity tilemaps can sometimes feel limiting to work with and this was an exciting chance to work with new technology.

To further simplify the workflow of Unity and LDtk, we created a simple LDtkManager system that allowed us to simply drag and drop an LDtk level into the Unity scene and load it. That system would handle everything regarding world loading, including assigning cameras to rooms, spawning enemies and assigning their pathfinding values, and many others. Slowly but surely, every single piece of the world was supposed to be placed in LDtk, and loaded into the engine automatically.



Thank you.

