

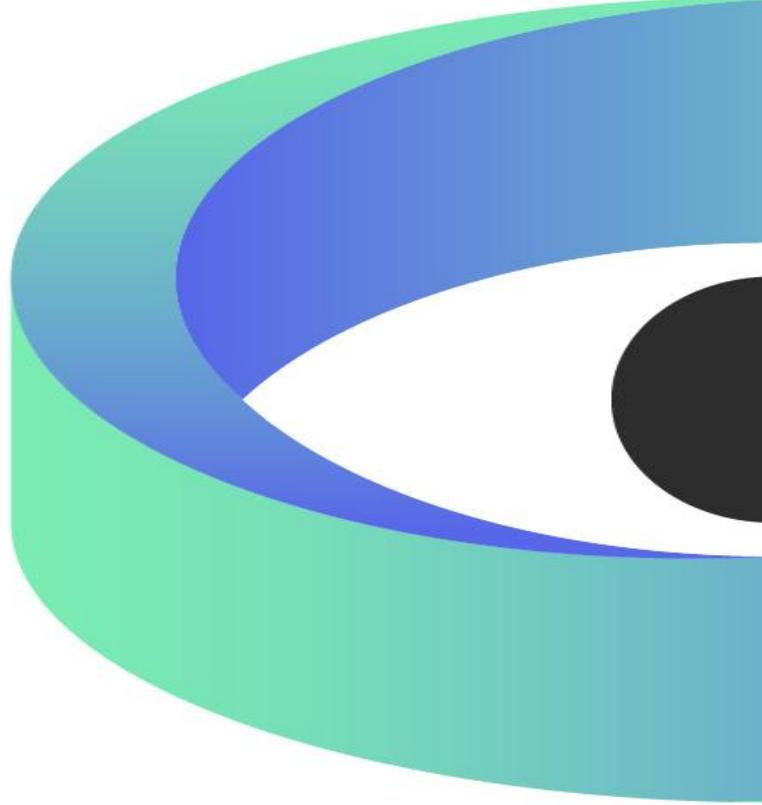


REALITIES
IN
TRANSITION

EXPLORE & SUPPORT ALTERNATIVE XR



WHAT IS REALITIES IN TRANSITION ?



RiT is an international community that aims at both exploring and supporting alternative Extended Reality (XR) productions, and experiment new narratives and creative processes.

RiT aims at building a strong, independent European XR creative and activist community, a think tank to tackle current and future challenges in the digital sector.



V2 Event Test_LAB: Realities in Transition 2023, Rotterdam

THE EUROPEAN XR COMMUNITY

RiT aims at building an European XR community, composed of emerging artists, experts and mentors who want to reflect on and promote a sustainable, open and inclusive XR.



WHO ARE WE?



Bruxelles (BE)



Marseille (FR)

CHRONIQUES

INCUBATEUR DES IMAGINAIRES NUMÉRIQUES

Marseille (FR)

V2_

Rotterdam
(NL)

 ARS ELECTRONICA
Art, Technology & Society

Linz (AT)

KONTEJNER

Zagreb (CR)

L.E.E.V.

LABORATORIO DE ELECTRÓNICA VISUAL

Gijón (ES)



<https://vimeo.com/782436455>



L.E.V. (Laboratorio de Electrónica Visual) is a platform of production, promotion and experimentation related to electronic sound creations, audiovisual creations and digital art.



WHAT DO WE DO?



Establishing XR as a sustainable, inclusive tool for the common good.



"The Distraction 5" by Studio Comrades,
V2, Test_LAB: Realities in Transition 2023, Rotterdam
EXCLUSIVE DEBUT SHOUL LAUNCH
www.v2.nl/test-lab

RiT wants to **consolidate and share** XR related knowledge, tools and methodologies.

RiT takes a **critical look at XR**, bringing together creation, curation and dissemination practices with education methods, privacy, ethics and sustainability issues.

A photograph of a person wearing a large, glowing green and blue light suit, possibly a costume or a VR/AR interface. The person is holding a small, glowing blue object in their hands. The background is dark, making the glowing suit stand out.

Supporting alternative XR creation to explore new narratives.

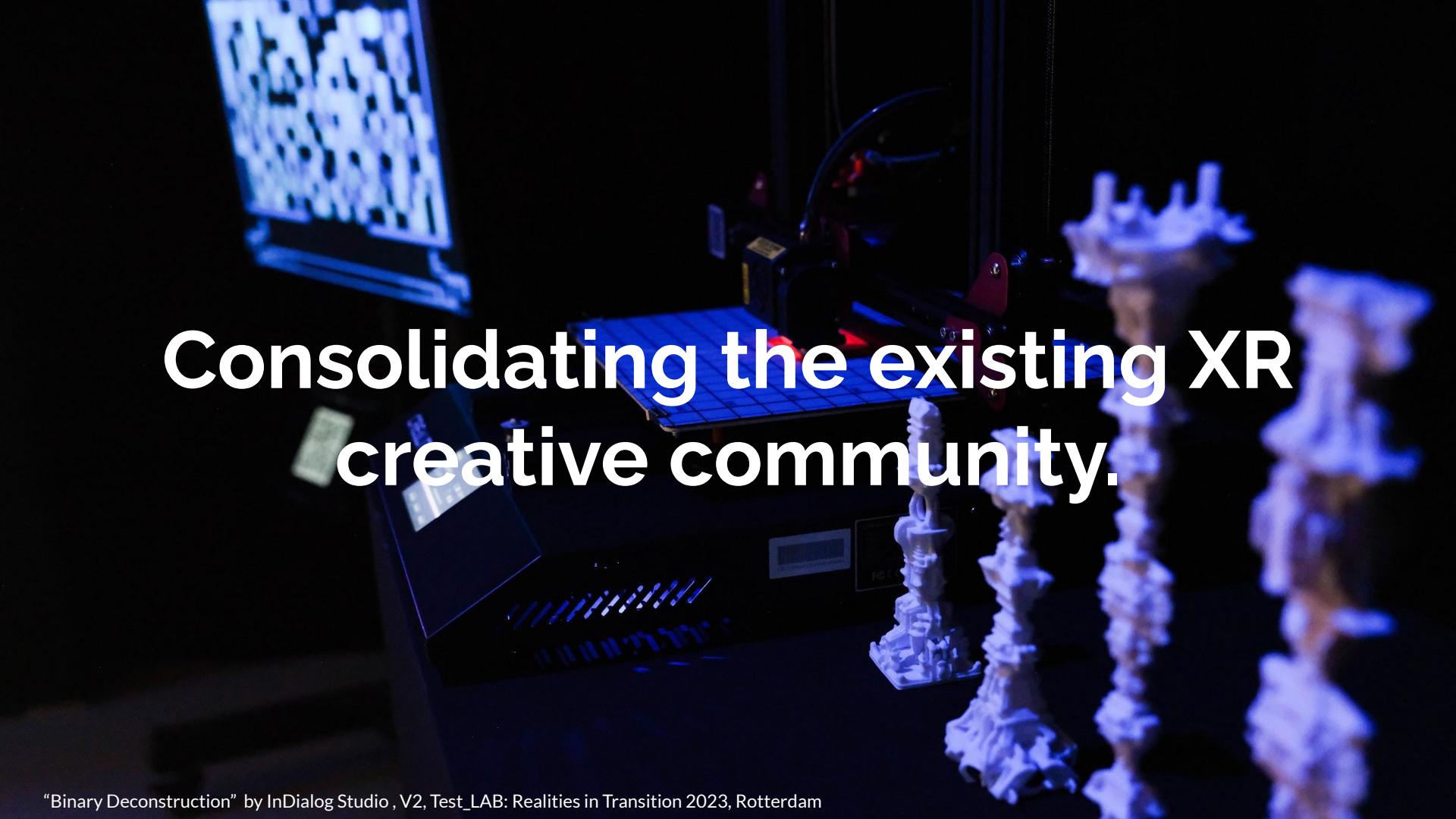
"The Collective Algorithm of Care" by Leo Scarin & Marlot Meyer, V2, Test_LAB: Realities in Transition 2023, Rotterdam



V2 Event Test_LAB: Realities in Transition 2023, Rotterdam

RiT wants to be a major actor in the XR sector, exploring new narratives and creative processes and inspiring the whole community.

Realities in Transition supports emerging XR creatives, artists and projects to incorporate common and open source methodologies as well as inclusive and sustainable practices into experimental XR creations.

A dark, atmospheric photograph featuring a 3D printer in the center-right, its red and blue lights glowing against the black background. To the left, a computer monitor displays a grid of binary code (0s and 1s). In the foreground, a small, translucent 3D-printed model of a classical statue is visible. The overall mood is mysterious and futuristic.

Consolidating the existing XR creative community.



V2 Event Test_LAB: Realities in Transition 2023, Rotterdam

RiT creates opportunities for networking and peer-to-peer learning between independent and activist XR initiatives, XR artists and researches, decision-makers, and the general public.

RiT wants to bring together these stakeholders on topics such as how to use XR as a common, open and sustainable tool in their work.

RiT is also a hub for existing independent and activist XR initiatives and promotes them, giving artists recognition at European level.



XR LABS & WORKSHOPS



WHY?

To transmit open source technical, cultural and critical thinking tools for XR.

To engage members of the Creative and Activist European XR community, at a European level.

FOR WHOM?

Local students and young creators.



RESIDENCIES



"What a Mess" by Hugo Pilates & Pedro Gil Farias
V2, Test_LAB: Realities in Transition 2023, Rotterdam

For 22 weeks, 17 emerging creators are supported by the RiT project during their artistic process. Through 3 international calls, RiT encourages inclusive and sustainable projects.

The artworks are then showcased in different exhibitions, fairs and festival supported by RiT.



EUROPEAN XR CAMPS



Through networking activities, peer-to-peer learning workshops, conferences and hackathons, the XR Camps bring together the Creative and Activist European XR community every year.

The Camps are also the occasion to gather the community around artistic exhibition and performances of XR projects.



EUROPEAN XR MANIFESTO



The European XR manifesto is a statement of the values, principles, beliefs and mission of the Creative and Activist European XR community.



HACKATHON

Recycling the AI



**MACHINE
LEARNING**



STATISTICS



Let's see who you really are
machine learning

What do you know
or what have you
heard about
Artificial
Intelligence and
machine learning?

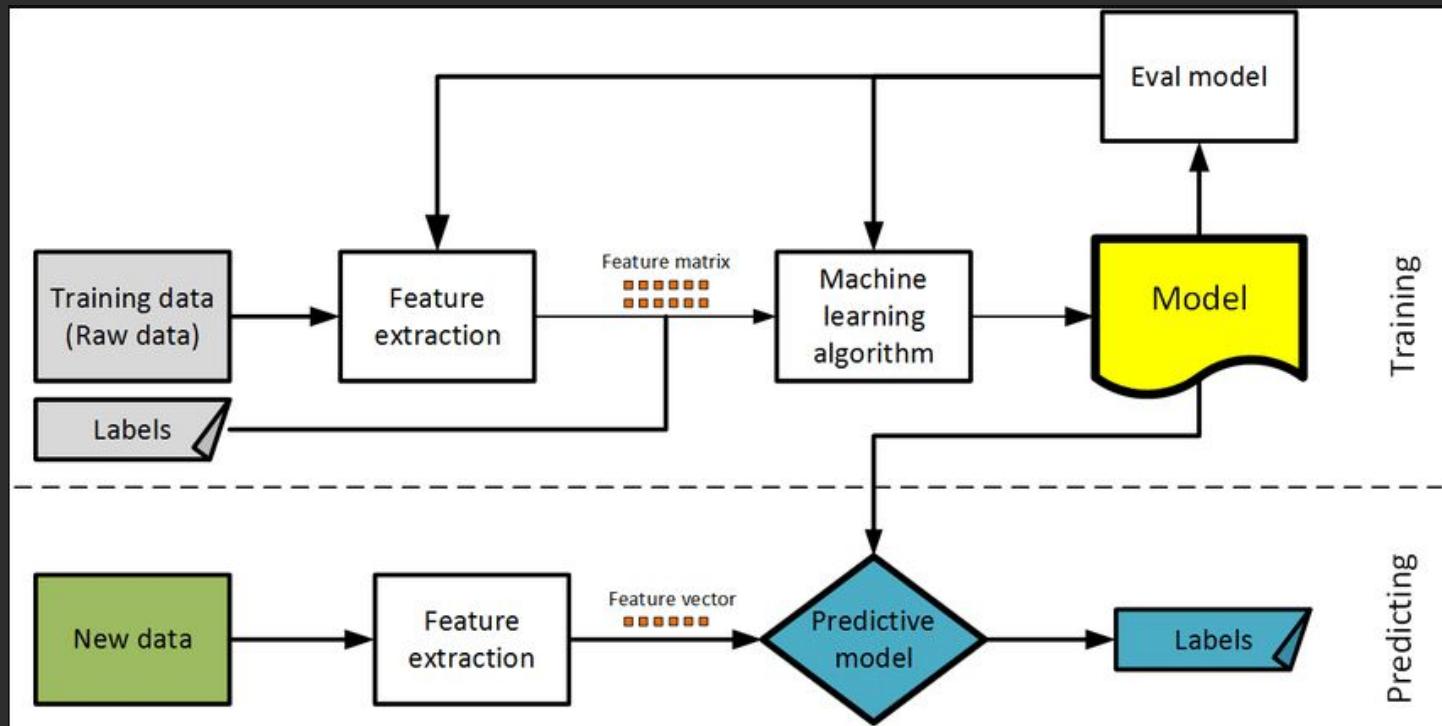
People telling me AI is going
to destroy the world

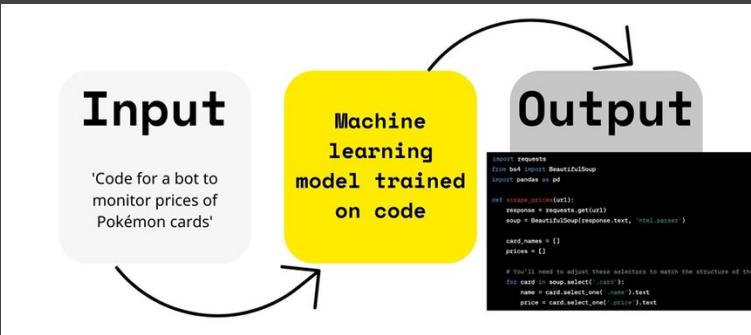
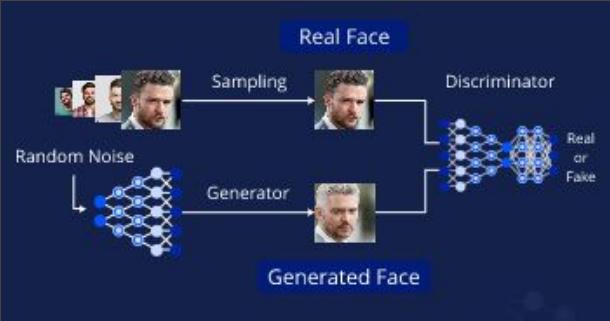
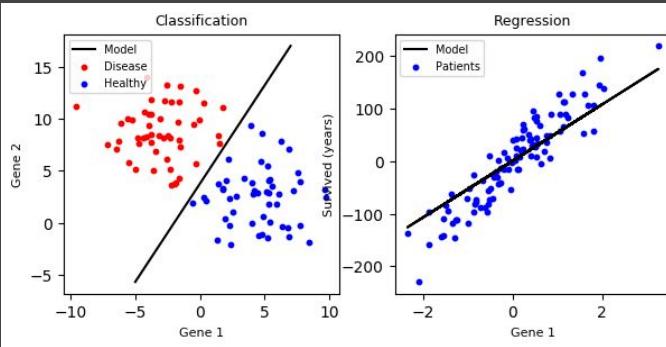
My neural network



Is Artificial
Intelligence really
going to destroy the
world?

Spoiler alert! AI is just a tool





What kind of things can the AI do?

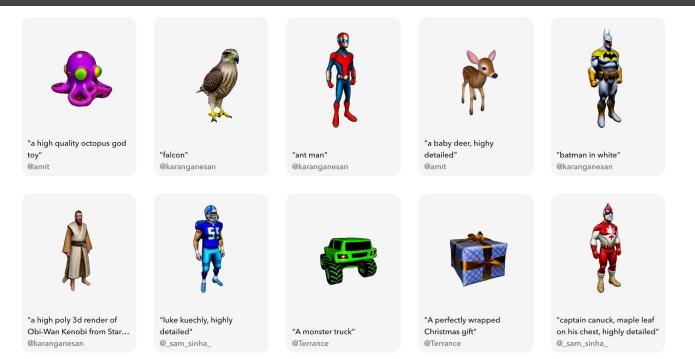
Choose a creation method



Style Transfer
Turn your photo into a masterpiece

M Tell me how ChatGPT works.

ChatGPT is a large language model that uses deep learning techniques to generate human-like text. It is based on the GPT (Generative Pre-trained Transformer) architecture, which uses a transformer neural network to process and generate text. The model is pre-trained on a massive dataset of text, such as books, articles, and websites, so it can understand the patterns and structure of natural language. When given a prompt or a starting point, the model uses this pre-trained knowledge to generate text that continues the given input in a coherent and natural way.



- a) Text to image
- b) Language models
- c) Text to 3d models
- d) ...

How do the AI's know so much?





Karl Sharro
@KarlreMarks

Humans doing the hard jobs on minimum wage while the robots write poetry and paint is not the future I wanted

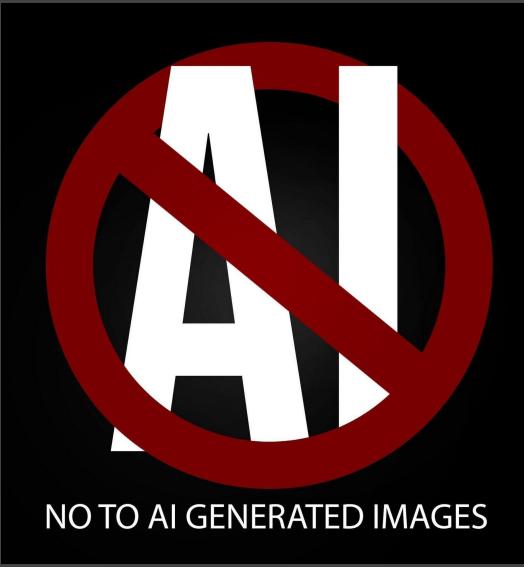
10:34 AM · May 15, 2023 · **4.6M** Views



CAN A ROBOT WRITE A SYMPHONY?
CAN A ROBOT TURN A CANVAS INTO A BEAUTIFUL MASTERPIECE?

CAN YOU?

What kind of things
should the AI do?



Clerzi ✨
@Clerzi

Generally:

Artists don't dislike AI art because it's "not real art" etc.

Artists dislike AI art because the programs are "trained" unethically using databases of art belonging to artists who have not given their consent.

This is not about gatekeeping. This is about theft.

12:07 pm · 3 Dec 2022

What kind of things *should not* the AI do?

NUMBER CRUNCHING

500ml ChatGPT needs to “drink” up to 500ml of clean fresh water for a simple conversation of roughly 20-50 questions and answers



7L litres Microsoft's San Francisco data centre is estimated to have used 700,000 litres of clean water to train OpenAI's GPT-3 model. The training had an additional off-site water footprint of **2.8 million litres due to electricity usage**



3.5mn litres

GPT-3 had a combined water footprint of **3.5 million litres in the US**, which would have risen to 4.9 million litres, if trained in the Asia-Pacific



► The newly-launched GPT-4 is likely to have a significantly **larger water footprint than GPT-3**

2% Warehouse-scale data centres, where most AI models are trained and deployed, collectively account for **2% of the**



global electricity usage

16bn litres

Google's self-owned data centres in the US consumed **16 billion litres of fresh water** - 90% of it potable - for on-site cooling in 2021



84mn litres

Microsoft's giant data centre complex in North Holland consumed **84 million litres of water in 2021**, at a time of severe water shortages



But this is not the only problem of AI and all digital and data driven technologies.



So, what do we do with
all the existing AI
generated content?



EDITORIALS

Why I'm no longer writing stories with AI

From our head stories writer



CELESTE KALLIO
28 ABR 2023



37



7

Share

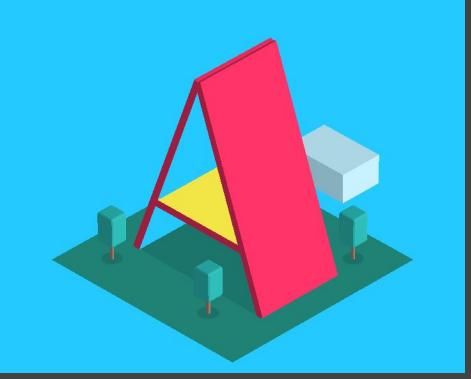
Preface: Stories by AI is on hiatus. We may or may not be back soon. If you'd be interesting in writing stories for us, get in touch! contact@storiesby.ai

Stories by AI



Five days ago everything fell apart when the sky turned red. I had no idea what we had done to anger the gods, or how we had come to be in this situation. But I knew it was the end. I made plans. So this morning, when I awoke to the blood-drenched clouds, alive: I had no idea what to do next.

We will begin reading one of the selected stories from the closed project *Stories by AI*.

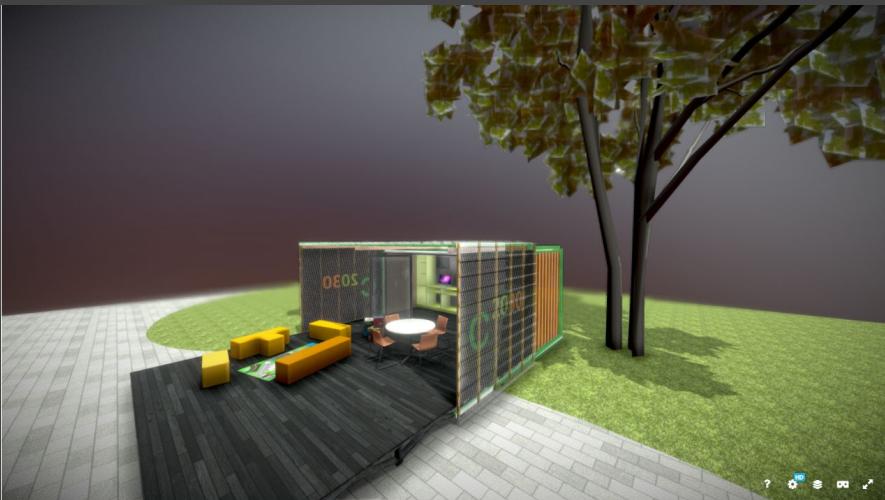


The screenshot shows a browser window with the URL <https://glitch.com/edit/#!/aframe>. The page title is "aframe". There are two tabs: "Show Live" and "Secure https://aframe.glitch.me". The left sidebar shows project files: back-end (with .env, package.json, README.md, server.js), front-end (with assets, views/index.html). The main area displays the following A-Frame code:

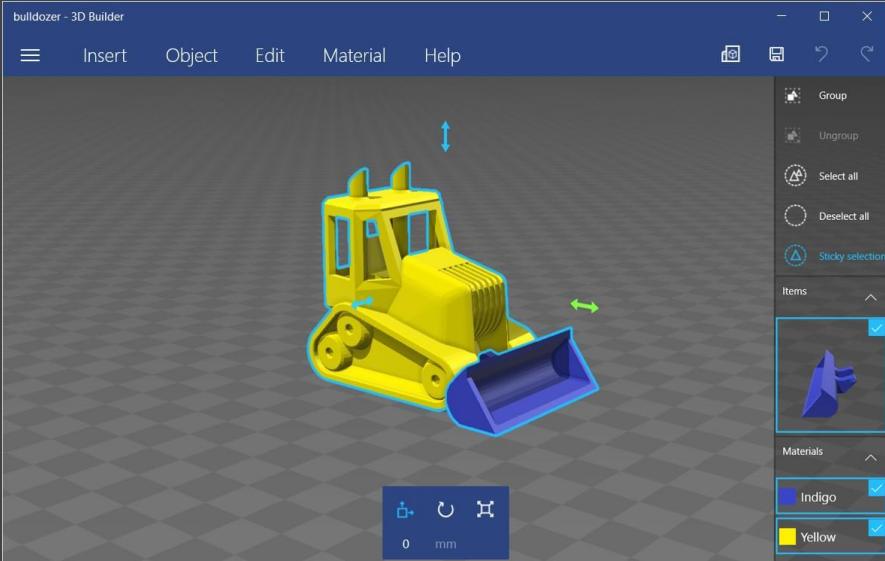
```
<head>
  <title>Hello, WebVR! - A-Frame</title>
  <meta name="description" content="Hello, WebVR! - A-Frame" />
  <script src="https://aframe.io/releases/0.5.0/aframe.min.js"></script>
</head>
<body>
  <a-scene>
    <a-box position="-1 0.5 -3" rotation="0 45 0" color="#4CAF50" />
    <a-sphere position="0 1.25 -5" radius="1.25" color="#FF9800" />
    <a-cylinder position="1 0.75 -3" radius="0.5" height="1" color="#FFC107" />
    <a-plane position="0 0 -4" rotation="0 0 0" width="4" height="1" color="#ECECFC" />
    <a-sky color="#ECECFC"></a-sky>
  </a-scene>
</body>
</html>
```

The preview window shows a 3D scene with a blue cube, a red sphere, and a yellow cylinder on a green plane.

We will create a VR
scene using an
HTML open source
library called
A-Frame based on
the story



We will fill the scene by recycling AI (and non AI but free) generated content from various websites.



If needed, we will edit those 3D models on 3D Builder in order to repurpose them for our scenes.



**IT'S NOT A COMPETITION, IT'S A
HACKATHON**

GOSH!

memegenerator.net

Simple advices:

- Don't wait to be told what to do.
- Split the tasks into the group.
- If stuck in a problem ask for help but while it arrives search in google.
- Relax and enjoy the ride.

WIN HACKATHON

YOU WILL

memegenerator.net

Let's begin!



Max, the plant whisperer

The underground world of plant collecting

The gift of a bird's song

The greatest goddamn hero I have ever known

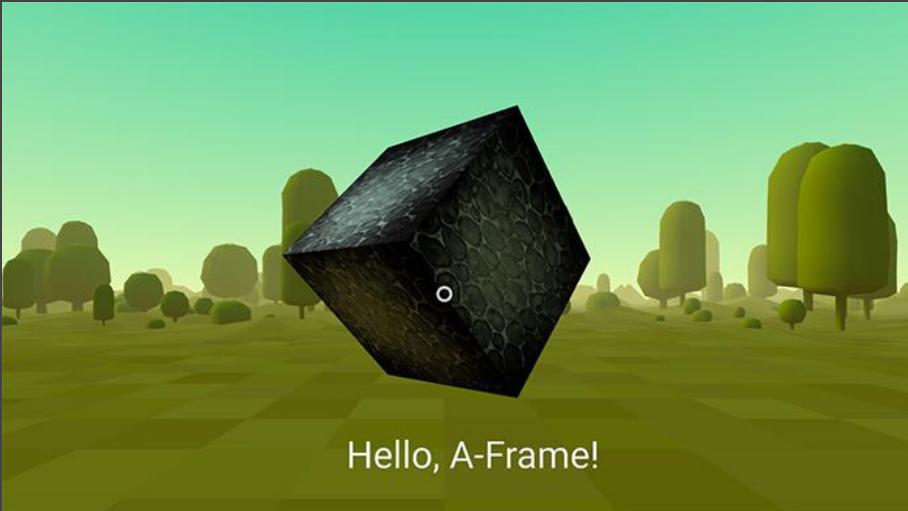
The hellmouth in the coffee shop

When the sky turned red



1st Workshop

**Basic A-frame tags, create a scene, movement
and camera. Basic objects**



<html>

</html>

- Basic HTML is code written between tags.
- Tags are special words inside < and > characters.
- Most tags are double. Which means you need two of them, one for open like <html> and another to close </html>.
- Between tags there are more tags in a tree-like structure.



< a-scene > tag

```
<html>  
  <head>  
    <script  
      src="https://aframe.io/releases  
      /1.4.0/aframe.min.js"></script>  
  </head>  
  <body>  
    <a-scene>  
    </a-scene>  
  </body>  
</html>
```

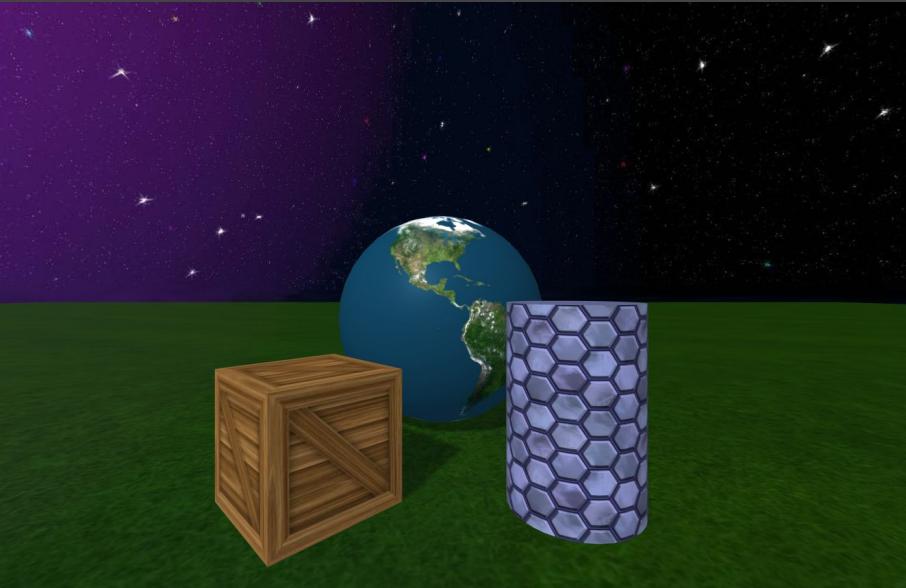
- A-Frame websites, like every website, have a `<head>` and a `<body>` tags.
- Inside `<head>` we place stuff needed to make the page work, like the `<script>` tag that gave us A-Frame capabilities.
- Other tags inside `<head>` are `<title>` or `<meta>`.
- Inside the `<body>` tag we need to place our 3D objects, inside a `<a-scene>` tag.

```
<a-scene>  
  <a-box  
    color="#666666"  
    position="0 2 -5"  
    rotation="0 45 45"  
    scale="2 2 2">  
  </a-box>  
</a-scene>
```

- The `<a-scene>` tag handles all the needed setup for 3d scenes.
- There are some basic 3D objects, like `<a-box>`.
- Others are: `<a-plane>`, `<a-sky>`, `<a-torus-knot>`, `<a-sphere>`, `<a-cylinder>` and `<a-cone>`
- They all share the properties: *color*, *position* (x, y, z), *rotation* (x, y, z) and *scale* (x, y, z).
- It is possible to add many objects to a `<a-scene>`. One, after the other.

```
<a-assets>  
      
</a-assets>  
  
<a-plane  
    material="src: #grass;  
        repeat:10 10;  
        transparent: true;  
        opacity: 0.75">  
</a-plane>
```

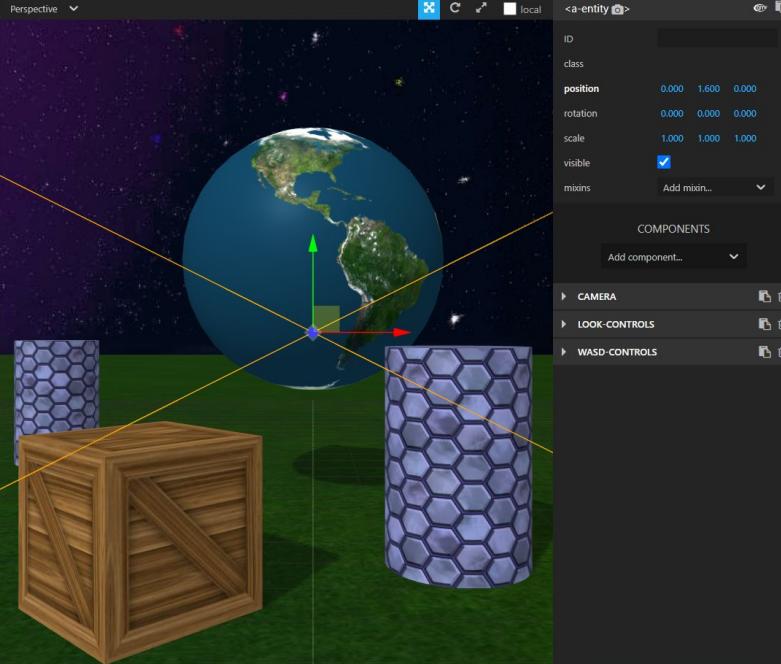
- Images are used mainly to add texture to an object. Then they are called materials.
- They have specific properties. Some of the most important are:
 - *src*: identification.
 - *repeat*: number of repetitions to cover the surface.
 - *transparent*: true or false.
 - *opacity*: percentage of transparency.
- Take care of the size of your images.



- Images are used mainly to add texture to an object. Then they are called materials.
- They have specific properties. Some of the most important are:
 - *src*: identification.
 - *repeat*: number of repetitions to cover the surface.
 - *transparent*: true or false.
 - *opacity*: percentage of transparency.
- Take care of the size of your images.

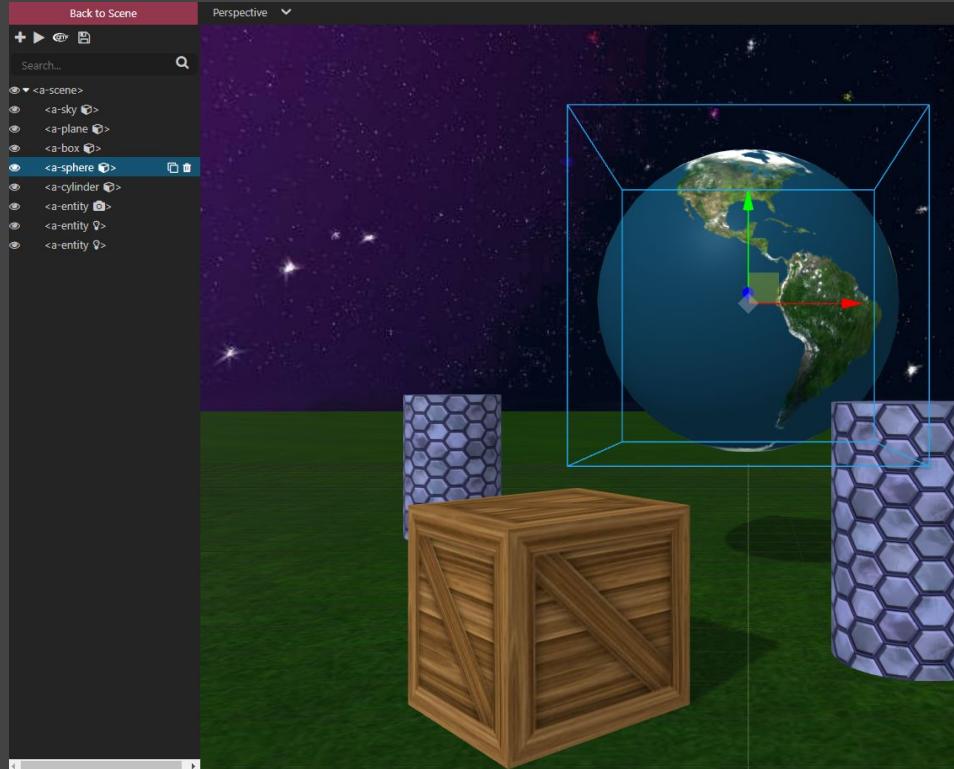


Crtl + Alt + i for Inspector

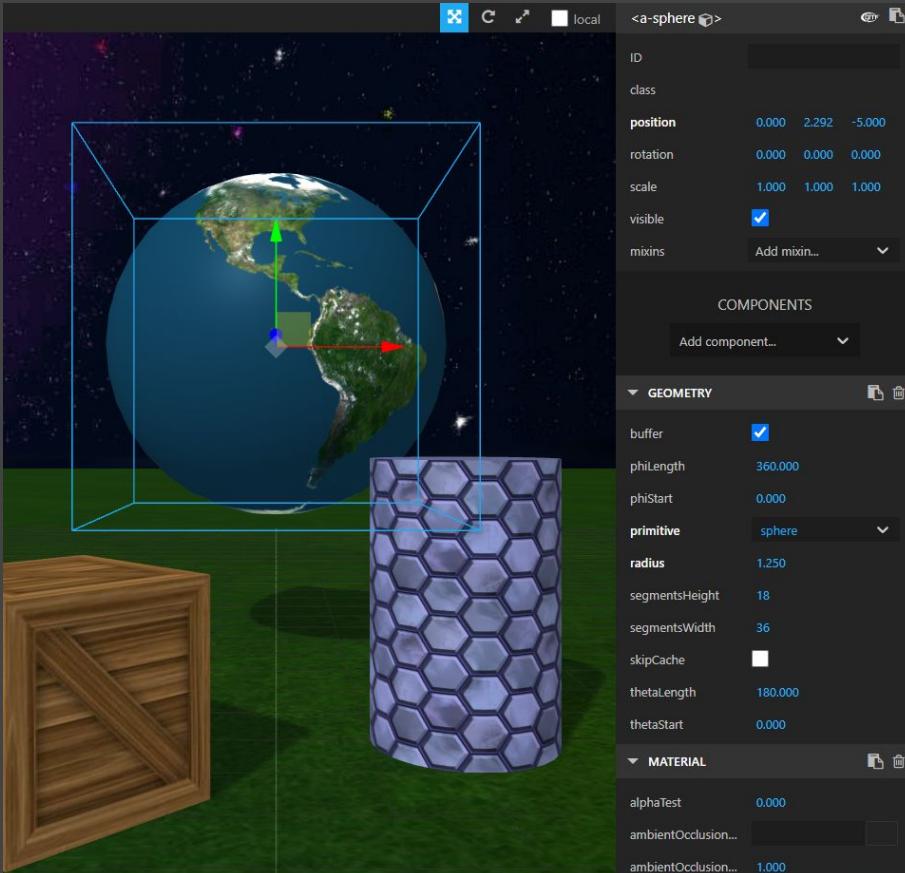


To ease the composition of a scene, A-frame comes with a tool called *Inspector*.

To see it in action, go to `image-texture.html` and hit `Ctrl + Alt + i`



- The menu on the left allows you to select the objects already present in the <a-scene> tag.
- It allows you to move them using the green, red and blue arrows on every selected object.
- You can also change the view to help you see in the three dimensions with number keys 1, 2, 3, 4 and 5.



- The menu on the right allows you to configure every property on every object.
- It allows you to scale, rotate, change colors, lights, materials, etc.
- **It is VERY IMPORTANT to copy the properties that you like, to be able then to paste them again in your own files.**



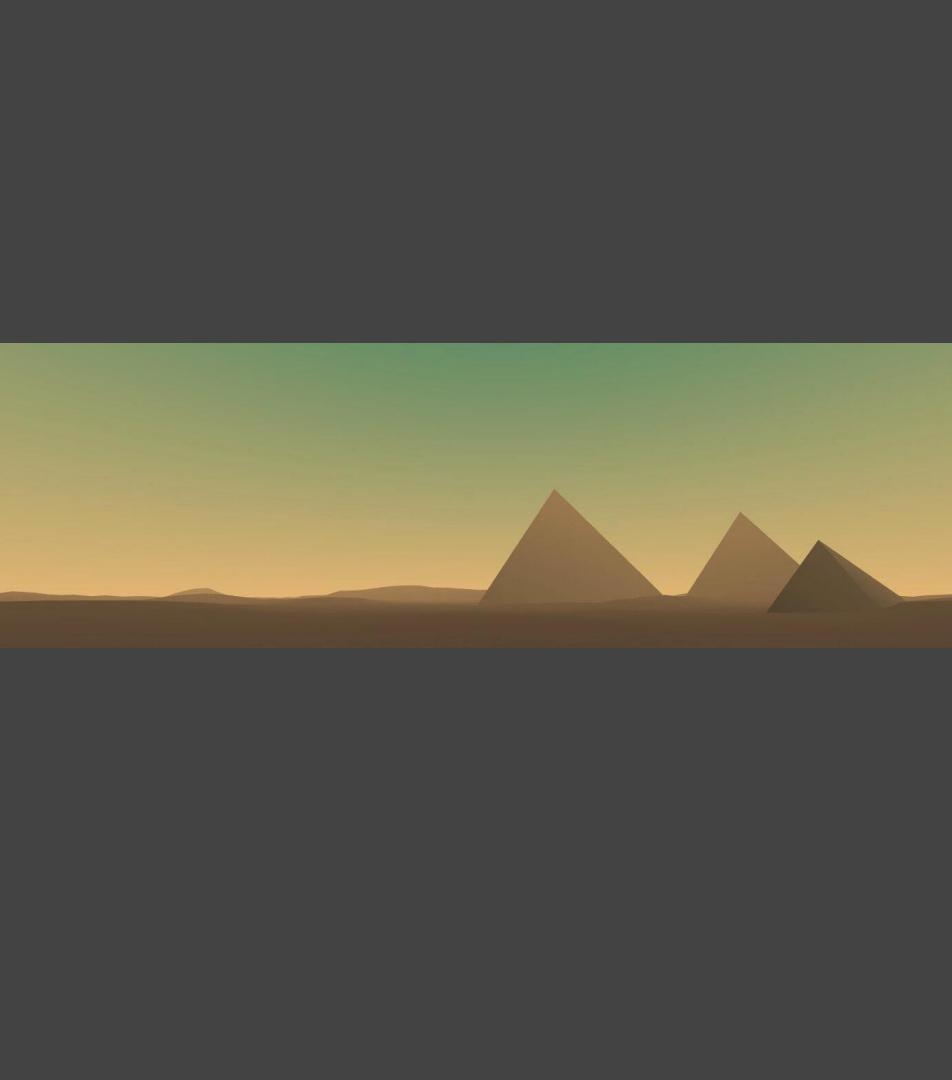
environment component



In order to start with the basics, A-frame comes with an extra component called *environment*, that allows us to create and customize an entire environment for us.

```
<head>  
  <script  
    src="js/aframe-environment-compone  
nt.js"></script>  
</head>  
  
<body>  
  <a-scene  
    environment="preset: forest;">  
  </a-scene>  
</body>
```

- In order to use this feature we need to add another `<script>` tag to the `<head>` tag.
- We then can add the property `environment` to the `<a-scene>` tag.
- There are several preset values for `environment`: `forest`, `goaland`, `contact`, `egypt`, etc.
- This creates a scene with floor, sky and some objects. And move around with `wasd` keys.



Try them out at
<https://supermedium.github.io/afra-me-environment-component/>

Once you have chosen one, use the Inspector to tweak the properties around and adapt it to your scene.



Working Group Time

How do we start the project on the computer for the hackathon?

- 1) Start the webserver.
- 2) Go to a web browser and type "localhost/aframe/".
- 3) The *A-frame Examples* page should run.
- 4) Go to your Computer and find the aframe folder.
- 5) Rename the file called *environment.html* to *hackathon-group-X.html* with the number of your group.
- 6) Create a new folder called *hackathon-group-X* with the number of your group.
- 7) All new objects and images must be downloaded in this folder.

How do we begin the project as a group team?

- 1) Go to the environment component test page and browse through all the environments.
- 2) Choose the environment that will host your world.
- 3) Begin to make changes to adapt it to your scene. Remember to copy paste the configuration to your *hackathon-group-x.html* file.
- 4) Decide with your group, what other 3d objects do you need and search for them inside *model* folder or in [Sketchfab](#)
- 5) Begin to design on a piece of paper your future scene.



2nd Workshop

Object component. 3D Builder. Animations





Entorno e iluminación

Temas

Predeterminado



Guardar configuración

Cargar configuración

Rotación de luces

▷ ⌂

x 1,0 ^

Exported from 3D Builder

o Object.1

v 2600.481445 2289.817383 8840.607422 255 255 255
v 3052.760742 3579.895996 9028.778320 255 255 255
v 2974.678223 3501.814453 9165.332031 255 255 255

- A model in 3D is just a set of data that represents an object in three dimensions.
- There are different kinds of formats for 3D objects: obj, fbx, gltf, etc.
- Sometimes an object is defined using more than just one file, like mtl files.
- Basically, any 3d object gives information about all the points that define that 3d object, the more detailed the object is modelled, the more points it has.



Entorno e iluminación

Temas

Predeterminado



Guardar configuración

Cargar configuración

Rotación de luces

▷ ⌂

Exported from 3D Builder

o Object.1

```
v 2600.481445 2289.817383 8840.607422 255 255 255  
v 3052.760742 3579.895996 9028.778320 255 255 255  
v 2974.678223 3501.814453 9165.332031 255 255 255
```

- Obj models are simpler, they has just the points information and color and optionally a mtl file with the information for the textures and materials.
- Gltf (glb or glt) files are more complex, they offer also information about:
 - Hierarchical objects
 - Scene information (light sources, cameras)
 - Skeletal structure and animation
 - More robust materials and shaders
- Other formats are possible, but safest is always obj and mtl.



<entity> tag

```
<a-assets>  
  <a-asset-item id="tree"  
    src="/path/to/tree.gltf">  
  </a-asset-item>  
</a-assets>
```

```
<a-entity  
  gltf-model="#tree">  
</a-entity>
```

- In order to use gltf objects, they must be included as `<a-assets>` tag.
- They need to have an unique id for identification.
- This id will be used then at the `<a-entity>` tag for loading.
- An `<a-entity>` tag works the same way as regular objects in terms of position, rotation, and scaling.

```
<a-assets>
```

```
  <a-asset-item id="tree-obj"  
    src="/path/to/tree.obj">
```

```
  </a-asset-item>
```

```
  <a-asset-item id="tree-mtl"  
    src="/path/to/tree.mtl">
```

```
  </a-asset-item>
```

```
</a-assets>
```

```
<a-entity
```

```
  obj-model="obj: #tree-obj;  
            mtl: #tree-mtl">
```

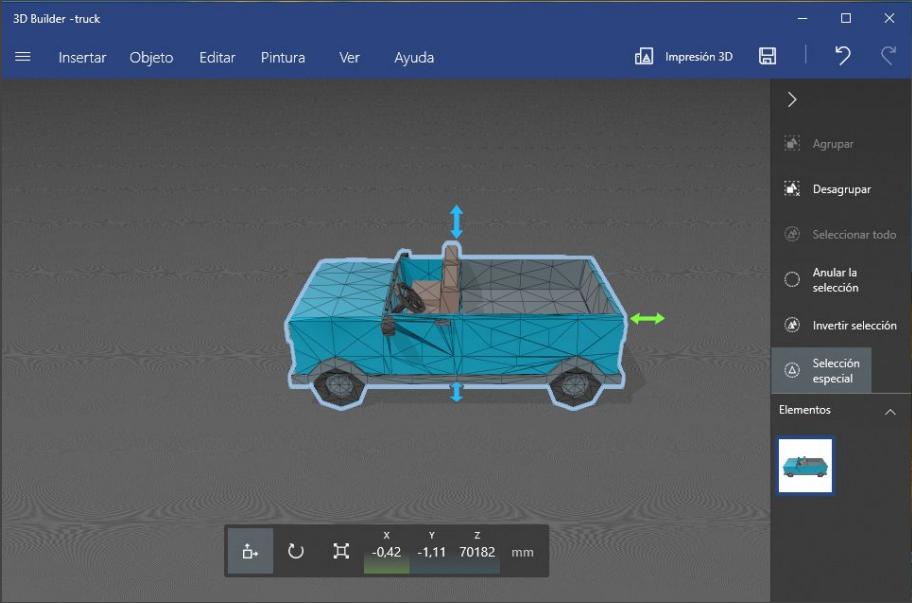
```
</a-entity>
```

- In order to use obj objects, they must be included as `<a-assets>` tag.
- They need to have an unique id for identification.
- This id will be used then at the `<a-entity>` tag for loading.
- An `<a-entity>` tag works the same way as regular objects in terms of position, rotation, and scaling.
- If an object has more than one file, all of them must be included in the `<a-assets>` tag and their ids must appear on the obj-model entity

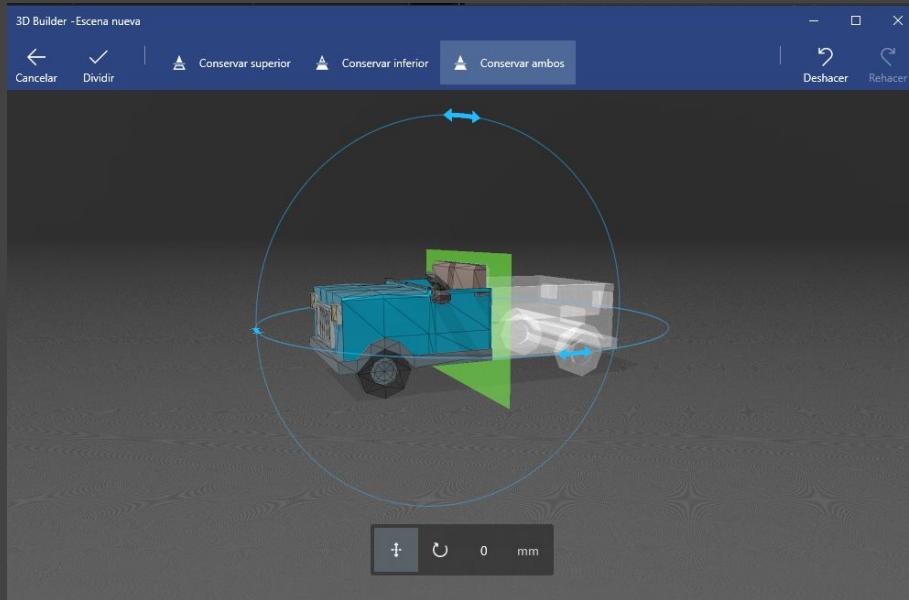


3D Builder

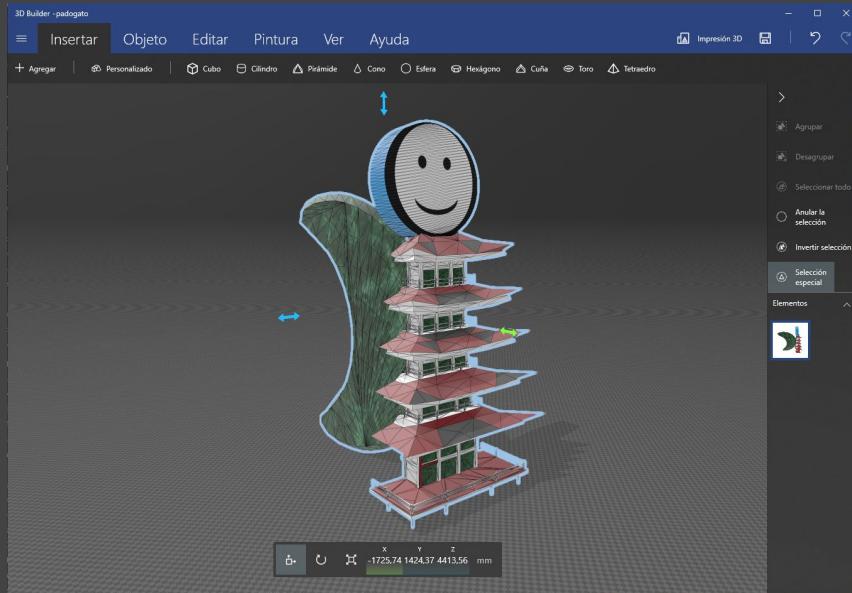




- 3D Builder is an application free for Windows, that edits 3d models.
- It is primarily designed for 3d printing not for modeling but does makes it simpler to use.
- On the top menu we have: Insert, Object, Edit, Paint, View and Help, Print and Save.
- On the down menu we have: position, rotation and scale tools.



- *Insert*: Allows to import more than one object.
- *Object*: Allows us to copy, mirror or eliminate an object.
- *Edit*: Allows us to split an object into two different objects and to combine them.
- *Paint*: Allows us to modify the color and add textures to our objects.
- *Save*: Allows us to export the new edited object into various 3d formats. Best option .gltf



Imagine There Is No Garbage by Kushane Chobanyan

This options will provide us with the ability of combining different models to create new ones.

On the side image we can see a new model created via other models. It is the combination of a moon, a pagoda tower and a cylinder.

That is the idea of recycling the AI in the models. Recycled art is an aesthetic of its own.



Animation property

```
<a-box
```

```
  position="-1 1.6 -5"
```

```
  animation="
```

```
    property: position;
```

```
    to: 1 8 -10;
```

```
    dur: 2000;
```

```
    loop: true">
```

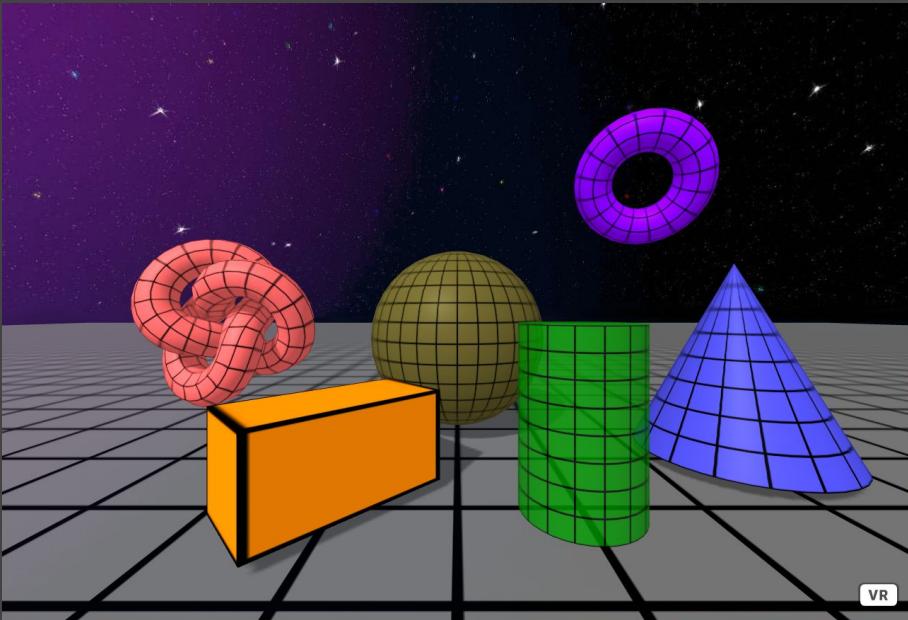
```
</a-box>
```

Animation is a property that can be added to an object or to an entity.

It allows to change values from its properties from an initial point to an end point, giving instructions about how long this transition last.

It can be given to a more than one property and more than one value at a time.

Not to confuse with the animation that an object can have in itself.



Its mains features are:

- property: which property to animate, it could be position, rotation but color as well.
- from: initial value.
- to: final value.
- dur: duration in milliseconds.
- loop: how many repetitions, either a number or *true* for infinite.
- delay: how many ms delay before begin the animation.

See

<https://aframe.io/docs/1.4.0/components/animation.html>
for more.



Working Group Time

What is it expected from you at the end of the next working group session?

- 1) Continue collecting your models.
- 2) Finish your scene design.
- 3) Begin importing your models into your scene.
- 4) Edit those models that are hard to find with 3D Builder.
- 5) Think of possible animations.