WORKSHOP ABAROMA
19-20-21 march 2025
INITIATION TO BLENDER ANIMATION AND SCENOGRAPHY IN WEB VR/AR

0_ WORKSHOP OBJECTIVE

- Objective of the workshop : basics of 3D animation (blender) and web VR (aframe)
  - ➔ **a VR round of "dancers"**
    - o **3D animation from 3D models rigged**
    - o **Web VR interface coding**
    - o **Scenography of 3D animations integration in VR space**

- Demo project VR / AR:
  - ➔ **"Teach me to dance !"**

1_ ORGANIZATION

- 2 teachers / 2 groups of 15 students
- Schedule :

<table>
<tr><th></th><th colspan="2">19/03</th><th colspan="2">20/03</th><th colspan="2">21/03</th></tr>
<tr><td rowspan="2">9h-12h</td><td rowspan="2">Group1
3D Anim</td><td rowspan="2">Group2
web VR</td><td rowspan="2">Group2
3D Anim</td><td rowspan="2">Group1
web VR</td><td>Animation</td><td>Scenography</td></tr>
<tr><td>Scenography</td><td>Animation</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>13h-16h</td><td>Group1
3D Anim</td><td>Group2
web VR</td><td>Group2
3D Anim</td><td>Group1
web VR</td><td colspan="2">Scenography+Animation
«The Shadow Move Contest»</td></tr>
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- Prequisites :
  - o List of student mail address to open a drive to share files
  - o Network : Internet access (wifi) to access files

Web VR

student skills	hardware / software / network

- basics knowledges in code editing
- basics knowledges in HTML/CSS
	- Hardware : 15+1PC + 1 videoprojector
	- Software :
	  - VS Code
	  - Internet brower (Firefox, Google)

Blender Animation

student skills	hardware / software / network
	- Blender v4.3

2_ SHORT PRESENTATION OF THE SCHOOL AND DEPARTMENT

- ENSAAMA (public school, 900 students, diplomas Licence/Master, erasmus partnership)
  - o https://ensaama.net/site/
  - o https://ensaama.net/site/home/formations/dnmade/numerique-expriences-narratives-et-interactives
  - o https://ensaama.net/site/home/formations/dsaa/design-numerique
  - o https://ensaama.net/site/home/international/genralit-s
  - o https://ensaama.net/site/home/international/incoming-students

- Positioning the Numeric Department

Difference between Digital and Numeric Design : the paradigms of the Numeric Department

- The premise is that **our reality today is as much a physical world as a numeric one**
- Numeric is considered as a **medium** and not a (digital) media, informational material to be shaped into representations.
  - ➔ That's why prefer "**Numeric Design**" as "Digital Design", even if it is not good English

- The position is delicate in a reality in which most digital technologies are used for the benefit of economic liberalism, population control, in commercials, security and military applications.
- The students' projects are designed **to denounce these negative virtualities**, and even more so to **highlight the positive virtualities** of the informational medium. This leads to **constant critical questioning** of the definition and nature of new technologies, as well as the positioning of the Department.

- The approach is therefore **more artistic, experimental and critical than design** (as applied to industry).
- We borrow from design the notion of the user scenario, but we're closer to the arts and crafts, firstly because **creativity comes from the material and the techniques for shaping it**, and secondly because **we produce the artwork** (and not images of what the project should be).An heavy technical training is a prerequisite for the design of digital representations.

- Representations based on 3 types of images:
  1. **captured images** (photo, video, 3D scan, etc.)
  2. **created images** (3D modeling, rig, animation),
  3. **calculated images** (generative design, interactivity).

- The training program is based on **3 strong technological poles** (using mostly free softwares except Adobe when it doesn't exist better alternatives)
  1. **technologies of static and moving images** (retouching, post-production, …)
  2. **3D technologies** (modeling, rig, animation with Blender and scan3D and 3D printing)
  3. **programming** (generative design, AR-VR, interactivity)

- It's exciting and exhausting too, because it's all happening so fast. The issue of AI is a new big topic !

3_ SUMMARY

- **Web VR/AR (aframe)**
  - Semantics
  - VR technical solutions
  - 0_HTML reminders
  - 1_aframe library
  - 2_3D models implementation in a VR scene
  - 3_3D animations in a VR scene
  - 4_VR workflow : aframe to VR Headset
  - 5_3D models/animation in a AR on smartphone
  - 6_Scenography a VR scene

- **3D animation (blender)**

- **Scenography + Animation :** *«The Shadow Move Contest»*
  - Performance
  - Captation