

Life Skills VR

Virtual Reality experience design and development (I02)

VR Experience Design

- Goals to achieve and reasons to design a VR experience
 - VR is immersive, memorable, impactful
 - Choice of VR technology based on usage scenarios
- Experience and storytelling
 - Storyboard, user stories, duration
 - Type of interaction and User Interface
- Content creation
 - Environment, objects, avatars, sounds
- Data collection
 - Collection of events during the experience, discrete choices and liminal actions



VR Technology

Today's most meaningful choice is using a standalone VR device with 6 DOF (degrees of freedom).

- Device is untethered, free from cables and PCs
- The user can move in the environment
- The application can be updated and distributed directly in a OTA manner (over-the-air)

Oculus (Meta) Quest 2
is the best device today

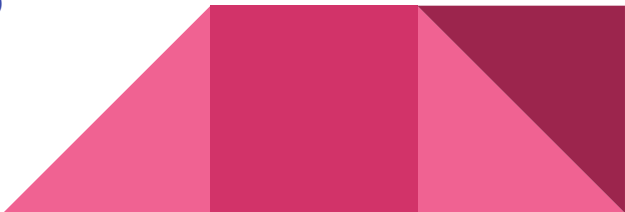


Experience and Storytelling

The very first step is defining the experience **Storyboard**

- A collection of **phases**, composed of different **tasks**
- Each phase is usually situated in an **environment**
- **Tasks** are a sequence of actions that the user must / should perform
- Storyboard can be linear or nonlinear
 - Some task can block the user from continuing the experience
 - Some task can be optional
 - Some task can also be critical and terminate the experience (ex: safety training)

Starting from unstructured **user stories** is the best way to understand the granularity level of phases and tasks



Interaction and User Interface

Life Skills modeling in VR can lead to many different types of interaction paradigms in order to **make decisions** and advance in the experience:

- Explicit interaction with **physical objects** on the environment.
 - Today's advancement in the Oculus SDK allow for a precise hand interaction and object manipulation
- Cognitive choices using a textual / icon-based **User Interface**
 - Plays well also with hand interaction
- Audio STT (speech to text) and NLP (natural language processing). Takes a lot of effort and relies on external services (ex: Google)



1



NEW XR REALISTIC INPUT

OCULUS INTERACTION SDK

Circular UI



- Libert  nell'eseguire azioni non corrette
- Modello fisico che risponde realisticamente
- Posizioni ed aree «a rischio»
- Feedback emotivamente convincente

Content Creation

From the Storyboard definition derives a list of **digital assets** that need to be created / obtained.

- Environment
- Objects
- Avatars
- Information Panels

Avatars have the **highest complexity** because they need to look realistic, with different animations, lip-sync and dynamic reactions to the user's choices.







15:04

am VR

Penso di aver perso qualche chilo sicuramente. Il mio medico dice che dovrei perderne ancora un po', per essere un po' più sicura, farebbe bene anche alla mia pressione!

Data Collection

The VR application should produce a report of **user actions and choices**, in order to extract data to be later processed and analyzed.

- Every user should have an identifier (login)
- A server-side application receives data during the usage (choices, task outcomes, time of execution)
- Data can be later downloaded in human and machine readable formats (CSV, JSON) and processed to analyze the results.

We can provide access to an already available platform we developed for this need.





ALIA Prevenzione Infortuni

Prevenzione Infortuni in settore igiene ambientale

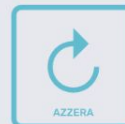
[Avvia sessione](#)



ALIA Rimozione
pasticche su Stralis

ALIA Rimozione pasticche su Stralis

ALIA Servizi Ambientali SpA

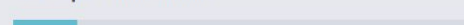


Modifica

ALIA Utente 1

PIN
55831

14% - 6pt Indossati I DPI



Attivo
Cap1



Scegli capitolo ▾ [Dettagli](#) ✕

25/10/2021 10:40	14%	6pt	Indossati i DPI
25/10/2021 10:40	7%	0pt	Scarpe da Lavoro indossato
25/10/2021 10:40	7%	0pt	Cunei equipaggiato
25/10/2021 10:40	7%	0pt	Inizio Esperienza

ALIA Utente 1

Raggruppa per: Corsi App Tutte

Tutte

App	Corso	N. Tracciato	Punteggio	Progress	CheckOut	Report
ALIA Rimozione pasticche :	ALIA Prevenzione Infortuni	4	6	21	14/10/2021 11:39	Scarica
ALIA Rimozione pasticche :	ALIA Prevenzione Infortuni	3	0	7	01/10/2021 12:06	n.d
ALIA Rimozione pasticche :	ALIA Prevenzione Infortuni	3	0	14	25/10/2021 10:47	n.d
ALIA Rimozione pasticche :	ALIA Prevenzione Infortuni	2	0	14	04/10/2021 16:22	Scarica
ALIA Rimozione pasticche :	ALIA Prevenzione Infortuni	2	0	14	14/10/2021 11:37	Scarica
ALIA Rimozione pasticche :	ALIA Prevenzione Infortuni	1	6	21	01/10/2021 12:04	Scarica

Reports

**ALIA Utente 1 - ALIA Rimozione pasticche su Stralis -
ALIA Prevenzione Infortuni**

Codice: 1f2f9298bd - report creato il Oct 14, 2021

[Scarica](#)

**ALIA Utente 1 - ALIA Rimozione pasticche su Stralis -
ALIA Prevenzione Infortuni**

Codice: 7cde2a01e7 - report creato il Oct 14, 2021

[Scarica](#)

**ALIA Utente 1 - ALIA Rimozione pasticche su Stralis -
ALIA Prevenzione Infortuni**

Codice: eef177ba90 - report creato il Oct 14, 2021

[Scarica](#)

**ALIA Utente 1 - ALIA Rimozione pasticche su Stralis -
ALIA Prevenzione Infortuni**

Codice: ad8cc19a36 - report creato il Oct 4, 2021

[Scarica](#)

Formatore **ALIA Formatore 1**
Provider **Rubestriva**
Data **14/10/2021 9:39**
Codice report **112f9298bd**, Tracciato 4

Dati anagrafici

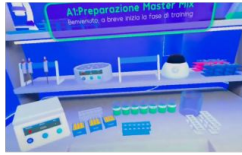
Nome **ALIA Utente 1**
Codice Fiscale **Codice fiscale non definito**
Azienda **ALIA Servizi Ambientali SpA**

Risultato finale

21% completamento report finale
6 punti

Dettagli tracciato

Data	Completamento	Punti	Messaggio
14/10/2021 9:39	0%	0pt	Inizio esperienza
14/10/2021 9:38	7%	0pt	Inizio Esperienza
14/10/2021 9:38	7%	0pt	Cunei equipaggiato
14/10/2021 9:38	7%	0pt	Scarpe da Lavoro indossato
14/10/2021 9:38	14%	6pt	Indossati i DPI
14/10/2021 9:38	14%	6pt	Guanti di nitrile indossato
14/10/2021 9:38	14%	6pt	GuantiPelle indossato
14/10/2021 9:39	14%	12pt	Ruota 1° asse SX inserito
14/10/2021 9:39	21%	18pt	Inseriti i Cunei
14/10/2021 9:39	21%	6pt	Termine Esperienza
14/10/2021 9:39	21%	6pt	Chiusura esperienza



Training / Simulation

Usage Report / User Profile



Animated / Scripted Avatars

Hard Skills

Soft Skills

O2 VR System



Node-based Dialogue script



Applied Games / Gamification

Personality Traits



AI / Natural Language Processing Sentiment Analysis



Games and Activities + choices modeling



CoPilot Designer

TALESPIN



Node based Dialogs

- high quality animations
- lip sync
- non linear scripting

TALESPIN

AI / NLP

- natural language processing
- sentiment analysis
- motion capture



Proposal

- Identify the main “pain points” to work on.
- Freely define one or more scenarios, without thinking about the constraints (tech / contents)
 - today
- Estimate what can be done, define the content / tech plan



Starter Ideas

- Simulating the first job interview, with multiple outcomes
 - Simulating more “days”, have a real trainer review the choices, send feedback, keep user hooked to go back to the VR app to see “what’s next”
- Design some “rooms” where applied games simulate, in a non-dramatic way, situations and interactions.
 - hard skills? logic? decision making?



Life Skills VR

Virtual Reality experience design and development (I02)

Piraeus, Greece

22-23 September 2022

State of the development

- In general
 - Implemented new Oculus Hands SDK
 - Researched Avatars and implemented scripted animation system
 - Prototyped user-facing UI (for choices)

- LifeSkillsVR
 - Created a sample environment (Space Station)
 - Created 4 avatars for a space crew (multiethnic)
 - Created a sample introductory situation



The Environment: Space Station



- “Metaverse” Sci-Fi inspired.
- Main hall with view of the planet, object of the mission.
- Some other rooms can be added.

The Crew



Juana Hernandez
Scientist

clever, funny, piano player

The Crew



Jayla Spencer
Captain

*direct, calm, a real leader
loves pets*

The Crew



Horace Davies

Doctor

serious, problematic, chess player

The Crew



Haru Tanaka
Engineer

practical, self-confident, martial artist

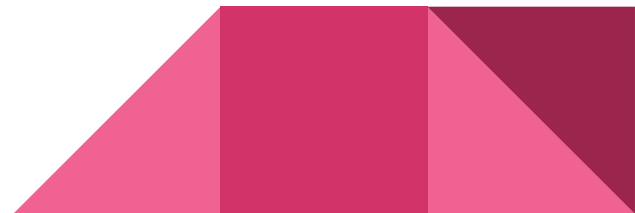


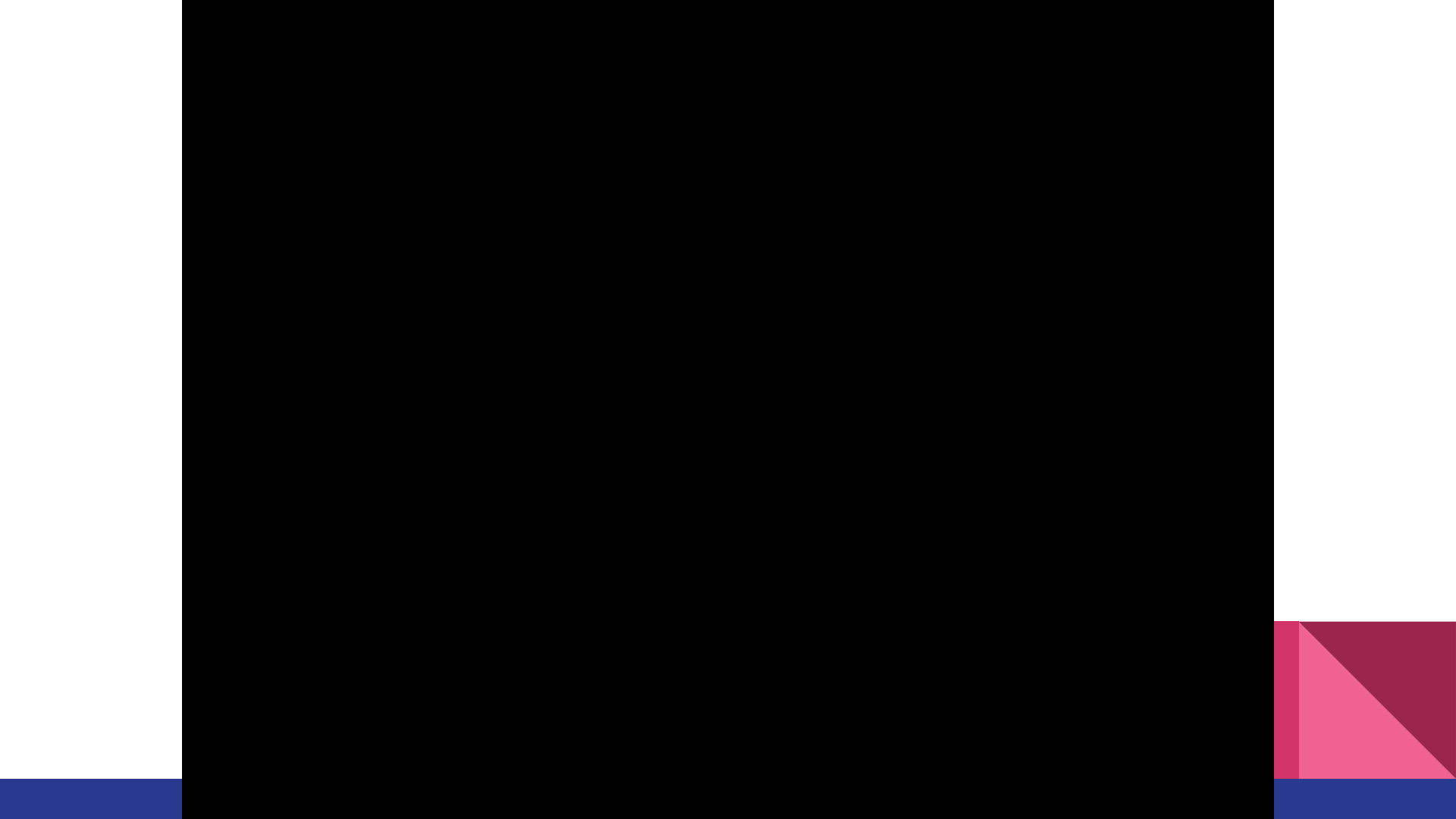
Introductory Situation

The player (a junior trainee) is taken on-board of the Space Station to complete its training.

During her first day, where she meets some of the crew members, a particular and dangerous event takes place: the Mission, and the whole Space Station is in danger.

Jayla, the Captain, asks the player to follow and help her manage the situation. The trainee will have to make decisions and test some important Life Skills.





Scene design


This sample scene is an example that contains the elements needed to create more skills-related scenes.

For example:

- A clear description of what **happens** (like a screenplay) related to the life skill experience
- The **environment** where the scene takes place (3d)
- The **actors** (3d characters) and the actions (animations)
- The **dialogues** and the voices (audio)
- The **objects** (3d)
- The **choices** the player must make (storyboard)
 - how these choices are interpreted for final reporting



Assets

- Space Station environment has been purchased.
 - Extra rooms must be modeled
 - 3D Characters are quite complex to create
 - We used our own licenses/tools (Character Creator) and other sw to model the space suit
 - Some characters can be purchased
 - Animations
 - Current animations are not high-quality (free content)
 - Other animations must be purchased.
 - Objects
 - Can be modeled or purchased
 - Dialogues
 - Current audio has been generated with Text-to-Speech (low quality)
 - Real audio should be voice-acted
- 

Characters

Items (270)

Casual_F_0047

NEW



\$30.00



Casual_F_0052

NEW



\$30.00



Casual_M_0044

NEW



\$30.00



Casual_M_0045

NEW



\$30.00



Casual_F_0046

NEW



\$30.00



Uniform_M_0034

NEW



\$30.00



Uniform_M_0035

NEW



\$30.00



Uniform_M_0036

NEW



\$30.00



Casual_M_0040

NEW



\$30.00



Casual_M_0041

NEW



\$30.00



Animations

Items (1697)

<p>Moto Driver Brake Get Off Quick HOT</p>  <p>\$2.25</p> <p>♡ 🛒</p>	<p>Run HOT</p>  <p>\$2.25</p> <p>♡ 🛒</p>	<p>Run To Blast FREE</p>  <p>\$0.00</p> <p>♡ 🛒</p>	<p>Aerobic Dance FREE</p>  <p>\$0.00</p> <p>♡ 🛒</p>	<p>LivingRoom Look Out HOT</p>  <p>\$4.50</p> <p>♡ 🛒</p>
<p>Dance To Music HOT</p>  <p>\$2.25</p> <p>♡ 🛒</p>	<p>Dance To Music HOT</p>  <p>\$2.25</p> <p>♡ 🛒</p>	<p>DJ - Perk Up HOT</p>  <p>\$2.25</p> <p>♡ 🛒</p>	<p>Musical Playtime HOT</p>  <p>\$2.25</p> <p>♡ 🛒</p>	<p>Sway To Music HOT</p>  <p>\$2.25</p> <p>♡ 🛒</p>

Development Milestones

