



How medical doctors and developers collaborate to develop educational XR applications

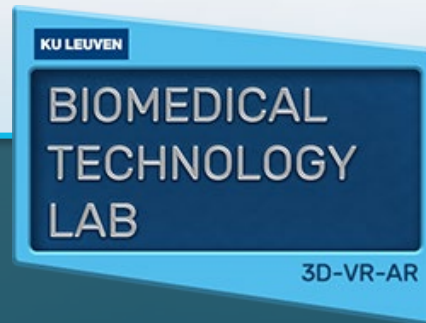
KU LEUVEN

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XR Developer
Biomedical Technology Lab

20/04/23

XR LAB



3 Game Devs/Designers.

Working for 3 faculties of the Biomedical Sciences Group.

In-house 3D & XR Development.

Convert skills or complex topics into 3D/VR simulations.

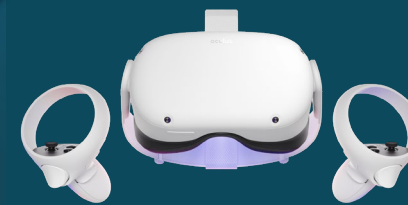
Strong collaboration between expertise center of education (educational experts), skills center and medical experts.

SOFTWARE



We use a game engine to create interactive 3D/VR environments.

OUTPUT



OCULUS QUEST 2
(wireless VR glasses)



ON SCREEN

DENTAL PROSTHESIS SIMULATOR



Dental Experts

Expertise Center of Education

STEPS Skills Center



3D application (non-VR)

Prosthesis Design in 3D

Validation of good/bad designs

Impact simulation

Student & Teacher version

Gamification

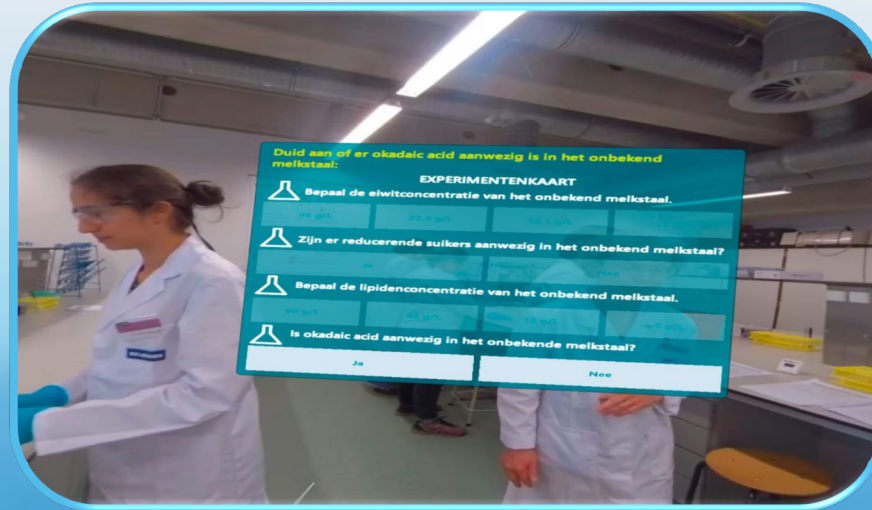
CRIMEHOUSE VR



Forensic Sciences experts
Police services
Expertise Center of Education



Target group: Forensic Sciences students
Realistic environments
Interactive: open doors, cupboards etc
Use all common investigative tools
Supporting chain of custody
Extensive Analytics & Dashboarding



VISKILAB VR



Lab assistants

Expertise Center of Education



360°video interactive experience

2D videos with hotspots

Multiple choice questions + feedback

Narrative-driven: murder mystery

Authentic labo environment

BASIC LIFE SUPPORT VR

MEDEA Conference

Talk: XR in Higher Education
Basic life support in virtual reality: from concept to implementation

20/06/23 11.00u-12.30u

Presented by Anne-Astrid Agten



Preview image



Emergency Services (University Hospital GHB)

Expertise Center of Education



Wireless VR (mobile)

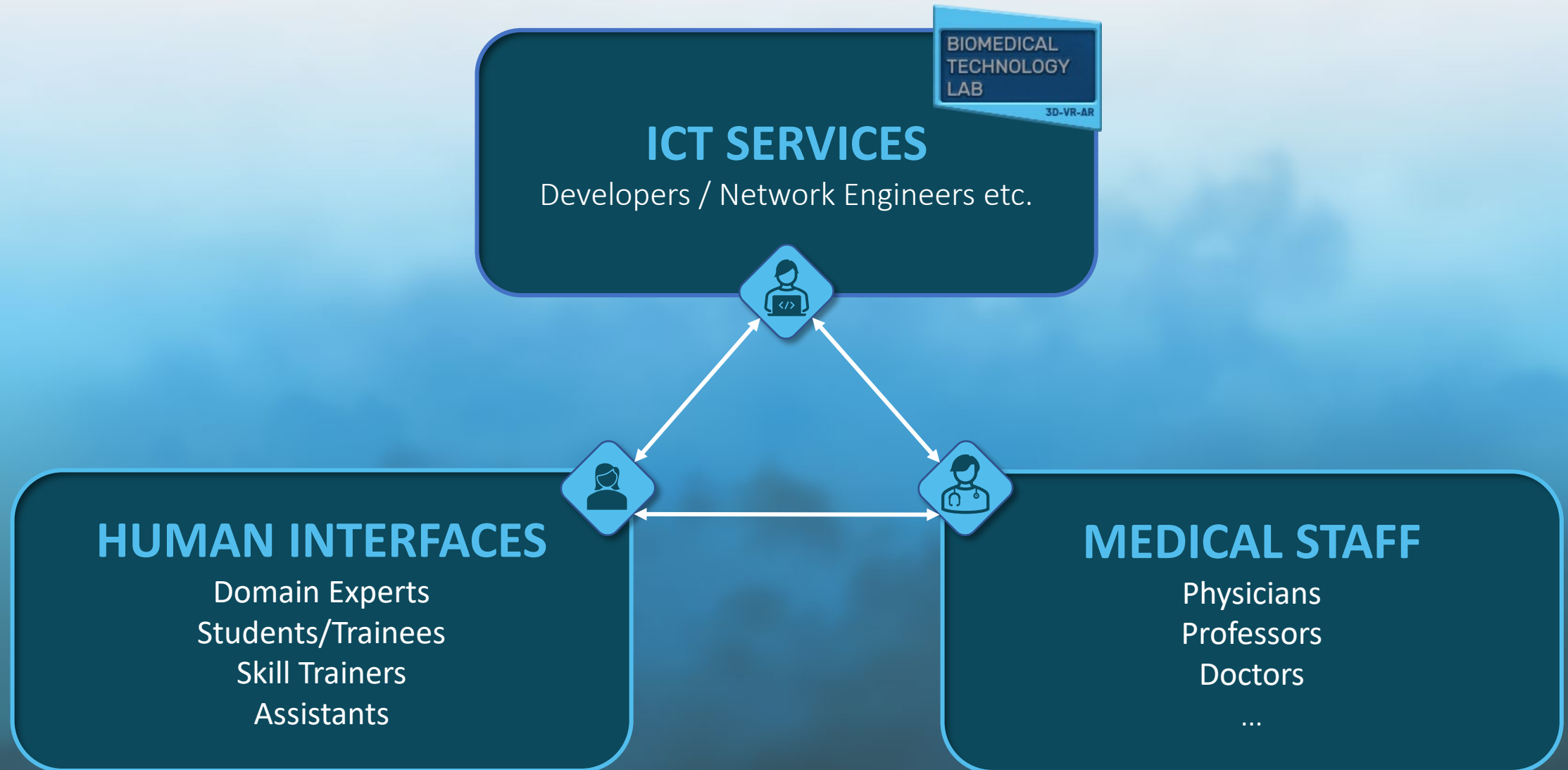
Sync physical mannekin & VR headset

Hand Tracking (no controllers)

Sensor monitoring (breathing, chest etc)

Real-Life environments & humans

Dutch Language



PREPARATION

Medical apps and apps for medical education are not the same.

Your application is only as succesful as the implementation.

Develop a proof-of-concept.

To measure is to know.

COMMUNICATION

Developers are not medics.

Use a domain expert as an interface between devs and medics.

Keep everyone in the loop, even when there is no news.

E-mail is only great for short messages.

VIRTUAL REALITY

The project team should all have a first experience with VR.

Ensure the dev team knows how to develop VR applications.

Be aware of motion sickness. Limit VR sessions to max 30 minutes.

Come up with a maintenance plan.

TESTING

Test frequently with the target audience.

Always include a tutorial of some kind.

XR Devs are the worst testers.

Always test in the actual setting.



THANK YOU!

ANY QUESTIONS?

Sven Graindor
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