Context-Aware-VR

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Context extraction

Context type information:

- Eye tracking
- Location tracking
- Rotation of the head

$\rightarrow$ Mobility pattern

$\rightarrow$ Basis for criteria to choose appropriate VR headsets

VR headset survey

Figure 1: Phone-driven VR

Advantages:

- Built-in gyroscope $\rightarrow$ rotation
- Location $\rightarrow$ through phone or indoor positioning system (Ken)

Disadvantages:

- Eye tracking difficult $\rightarrow$ position of front facing camera
- Precision $\rightarrow$ dependent on phone
- Everything needs to be app-driven $\rightarrow$ complexity increase

VR headset survey

Figure 2: HTC Vive Pro Eye

Advantages:

- Rotation $\rightarrow$
- Location $\rightarrow$
- Eye tracking $\rightarrow$ tobii xr sdk or Vive SRanipal SDK

Disadvantages:

- Unity only
- Precision $\rightarrow$ dependent on phone
- Everything needs to be app-driven $\rightarrow$ complexity increase

VR headset survey

Figure 3: Tobii HTC VIVE Devkit/Tobii Pro VR Integration

Advantages:

- Supports: Unity, Unreal and native
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Disadvantages:

-

VR headset survey

Figure 4: Varjo v2

- Business only
- VR/AR
- €5000 and more $\rightarrow$ software

VR headset survey

VR headsets with eye-tracking as a module:

PupilLabs Binocular Add-on:

- €1400!
- High compatibility: Python, Unity,...
- HTC Vive, Vive PRO or Vive Cosmos VR

Figure 5: Pupillabs vs. Droolon f1

Droolon f1:

- Only costs around €150
- Vive Cosmos, Vive Focus Plus, Vive Focus or the original Vive aka Vive CE