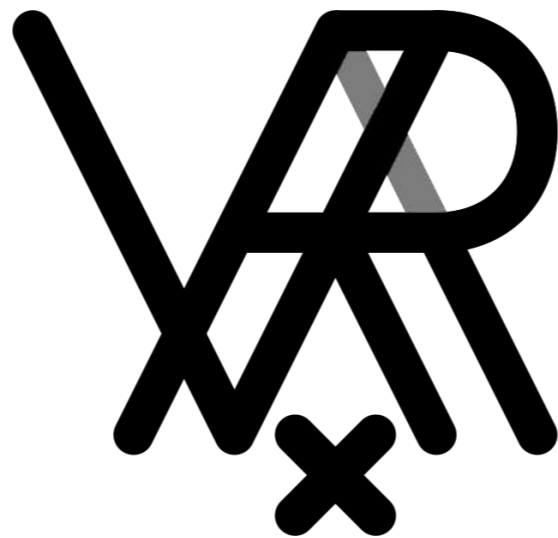


Exploring and Interacting with Data in Virtual and Augmented Reality

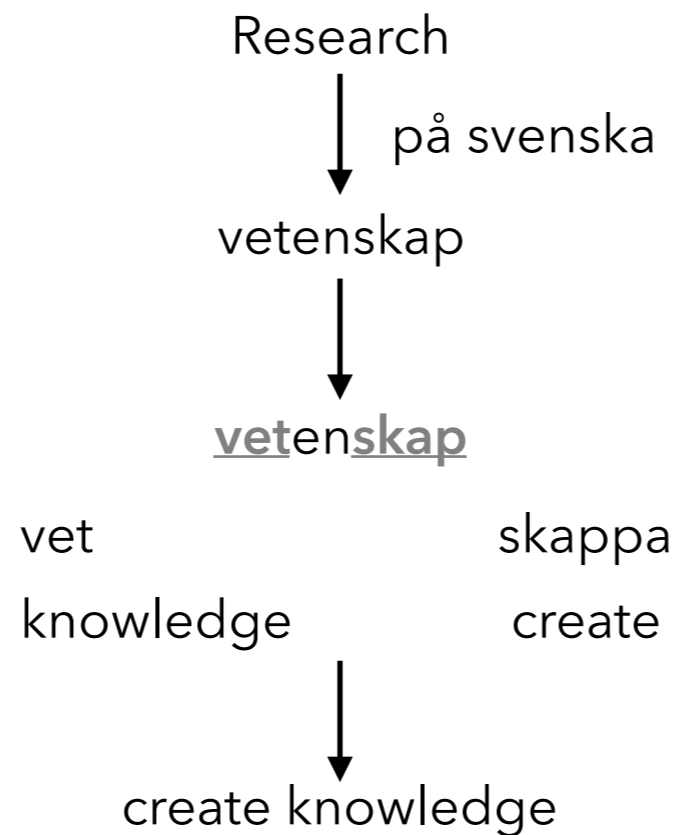
Aris Alissandrakis & Nico Reski
VRxAR Labs



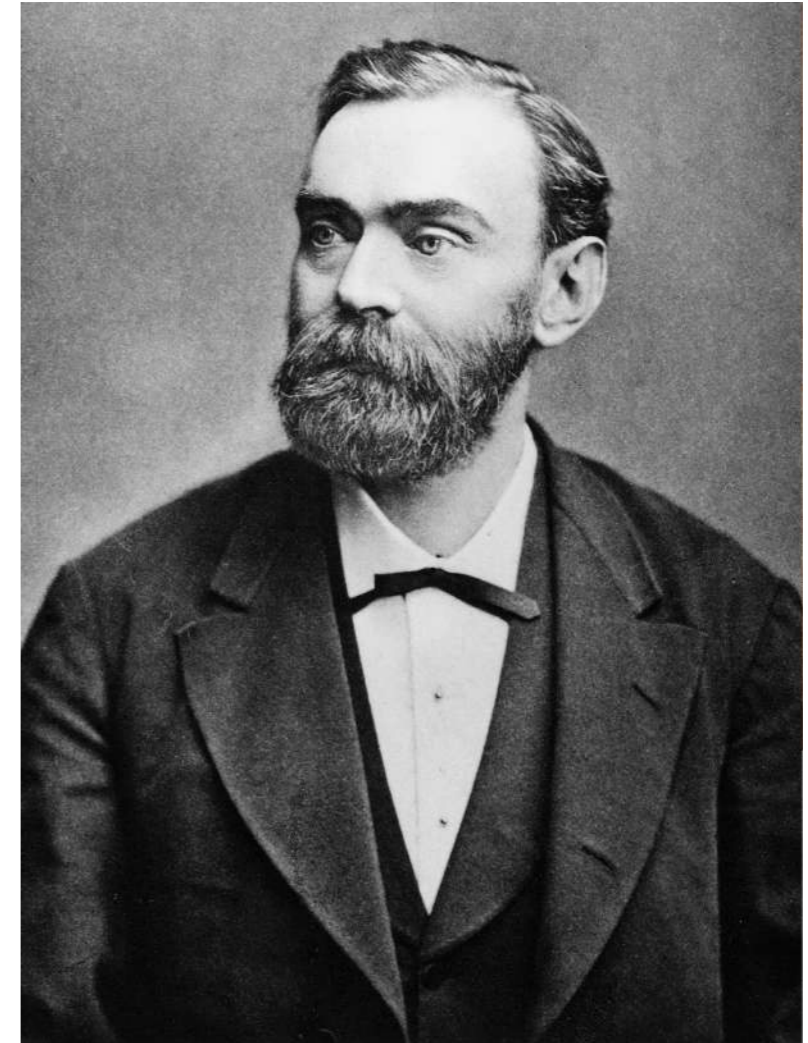
What is a researcher?

"someone whose job is to study a subject carefully, especially in order to discover new information or understand the subject better"

(Cambridge Dictionary, 2018)



Do you know these researchers?



Do you know these researchers?



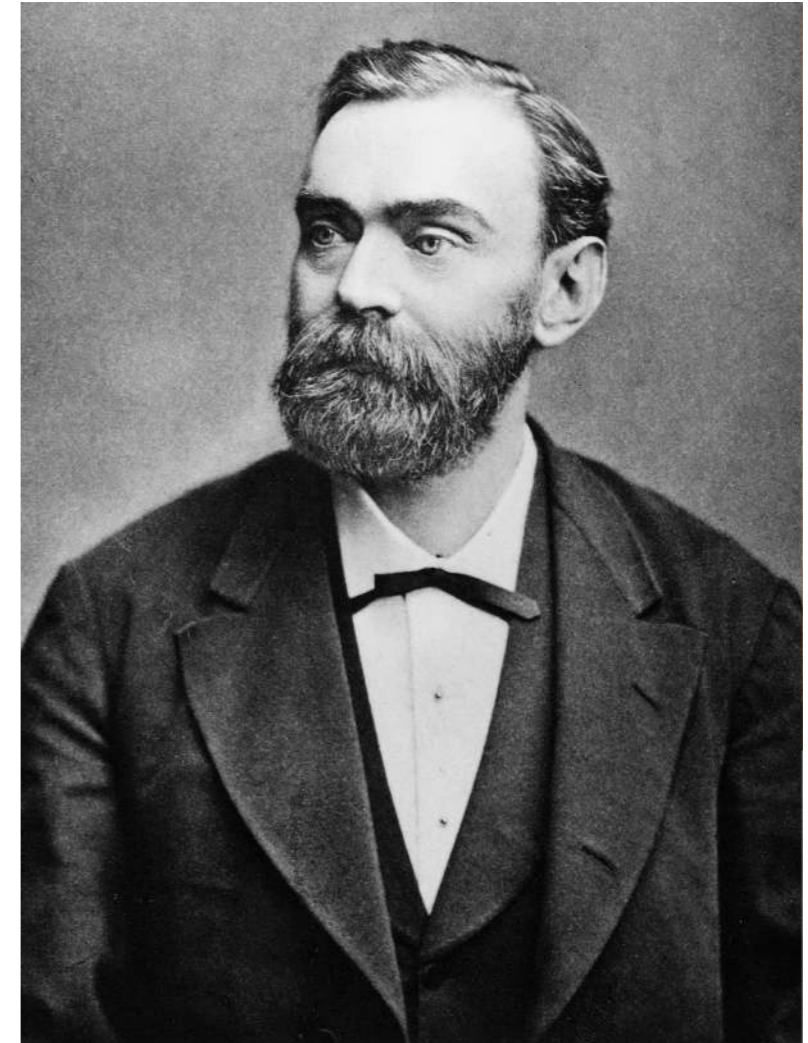
Carl von Linné

23 May 1707 - 10 January 1778

botanist, physician, and zoologist

modern biological naming scheme

"binomial nomenclature"



Alfred Nobel

21 October 1833 - 10 December 1896

chemist, engineer, inventor

dynamite

What does a researcher do?

1. **gain knowledge** about the up-to-date state of a research subject
2. identify a research "**gap**"
3. think about how to contribute new knowledge to **fill this research gap**
4. formulate **hypothesis** (explanation of a phenomenon)
5. define a **method** on how to test the hypothesis
6. perform the **test** and **collect data**
7. **analyse** the collected data
8. **discuss / interpret / make meaning** of the data
9. **answer the hypothesis** based on the discussed findings
10. **report** (publish; share with other researchers; share with the world)

contribute new knowledge to drive mankind forward

What do we do then at VRxAR Labs?

Virtual Reality research subject

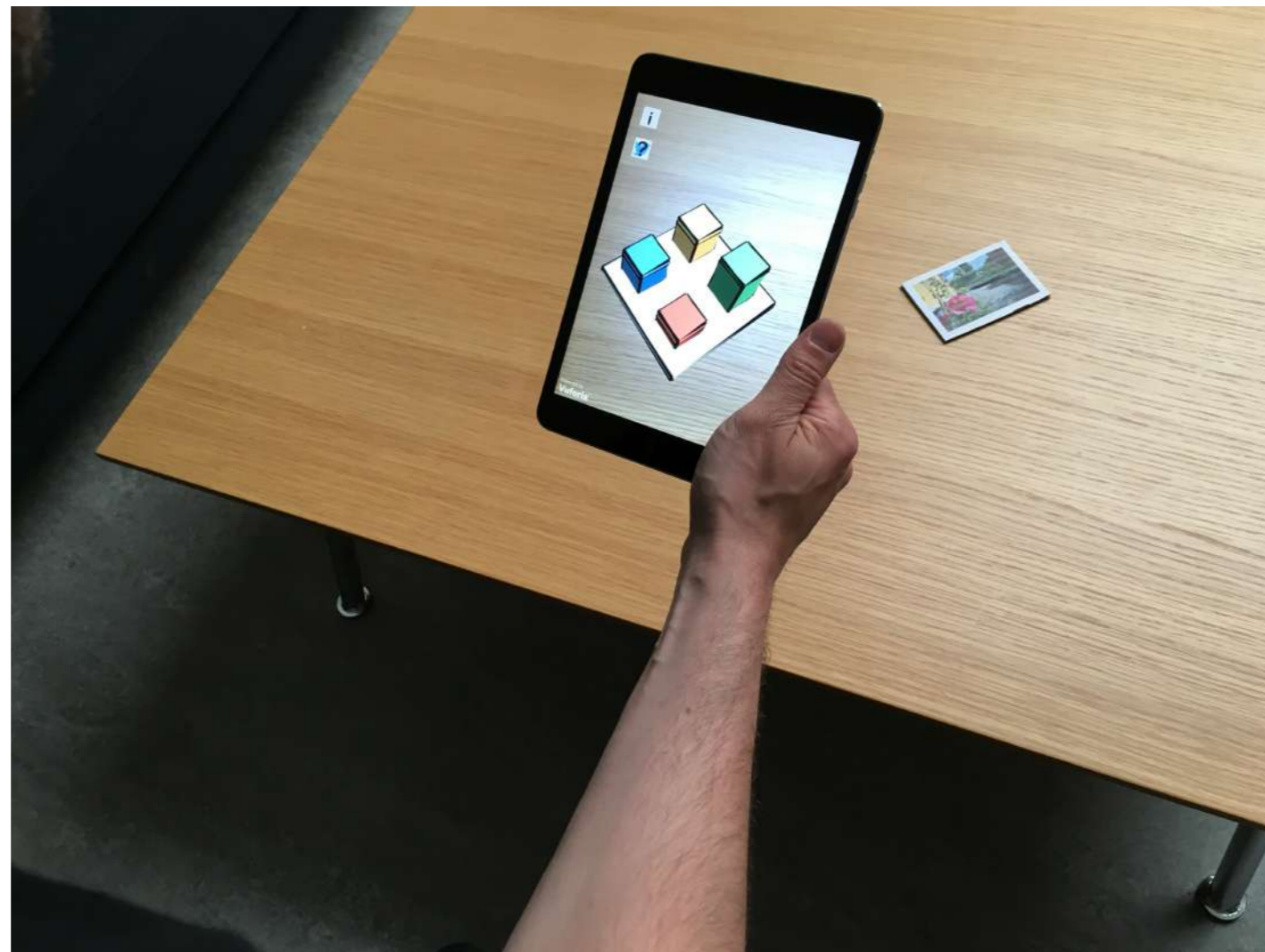
- creation of a fully virtual world (computer-generated content)
- total immersion in the digital world
- (often) visually isolated from real-world surroundings



What do we do then at VRxAR Labs?

Augmented Reality research subject

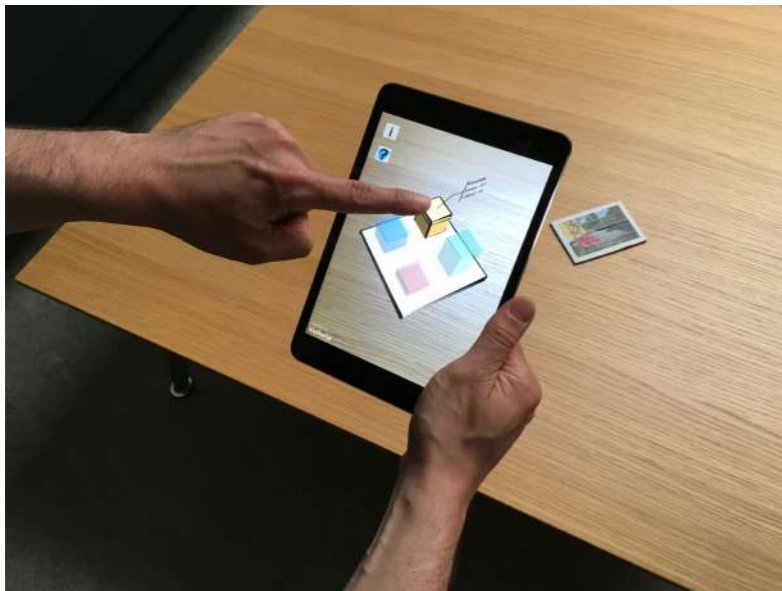
- real and virtual objects coexist in the real-world
- real and virtual objects are aligned with each other
- runs interactively in three dimensions and in real-time



What do we do then at VRxAR Labs?

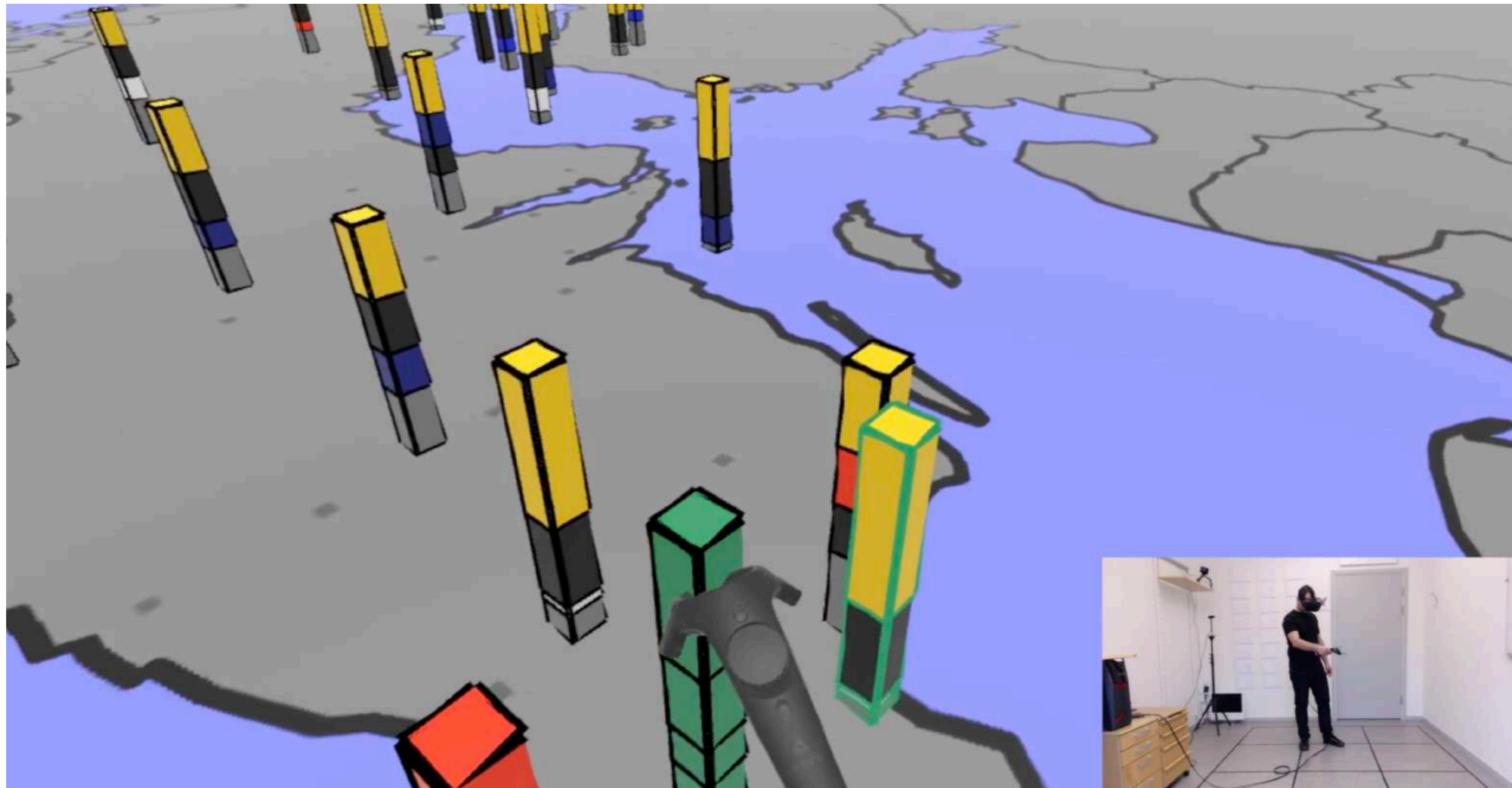
Human-Computer Interaction (HCI) research subject

- how do humans interact with computer technologies
- interface design / interaction design



What do we do then at VRxAR Labs?

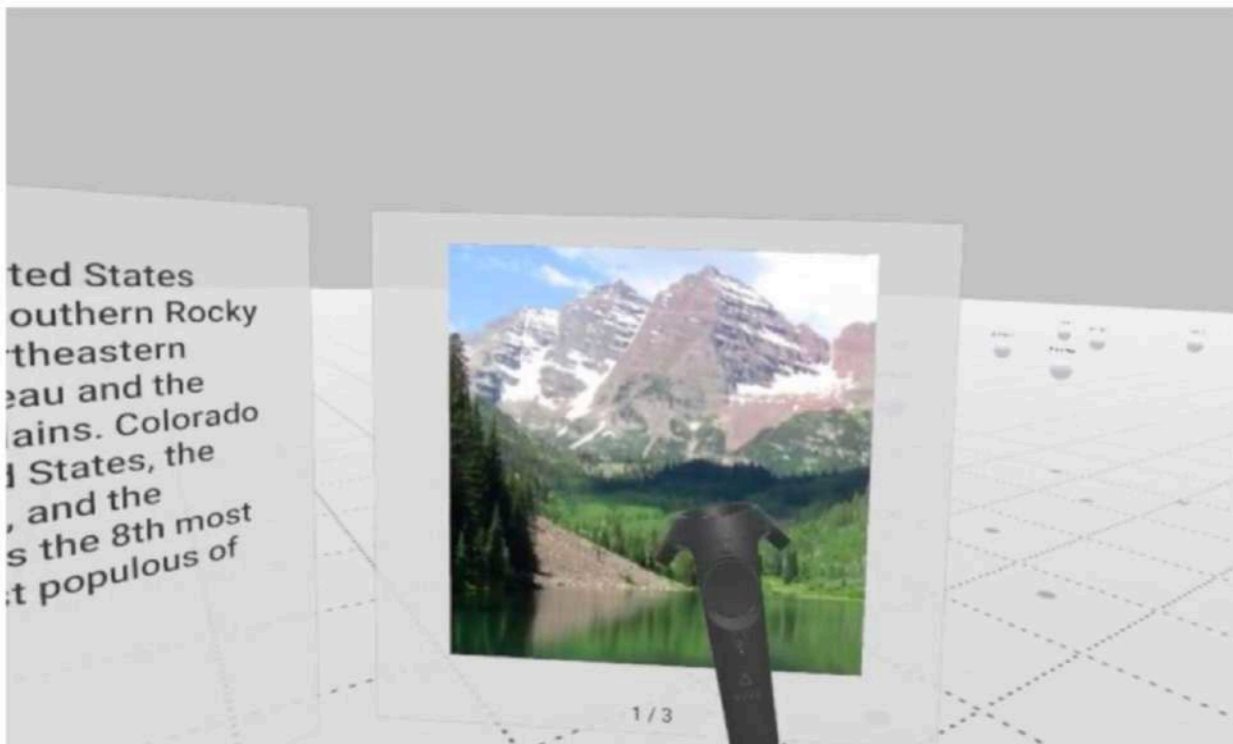
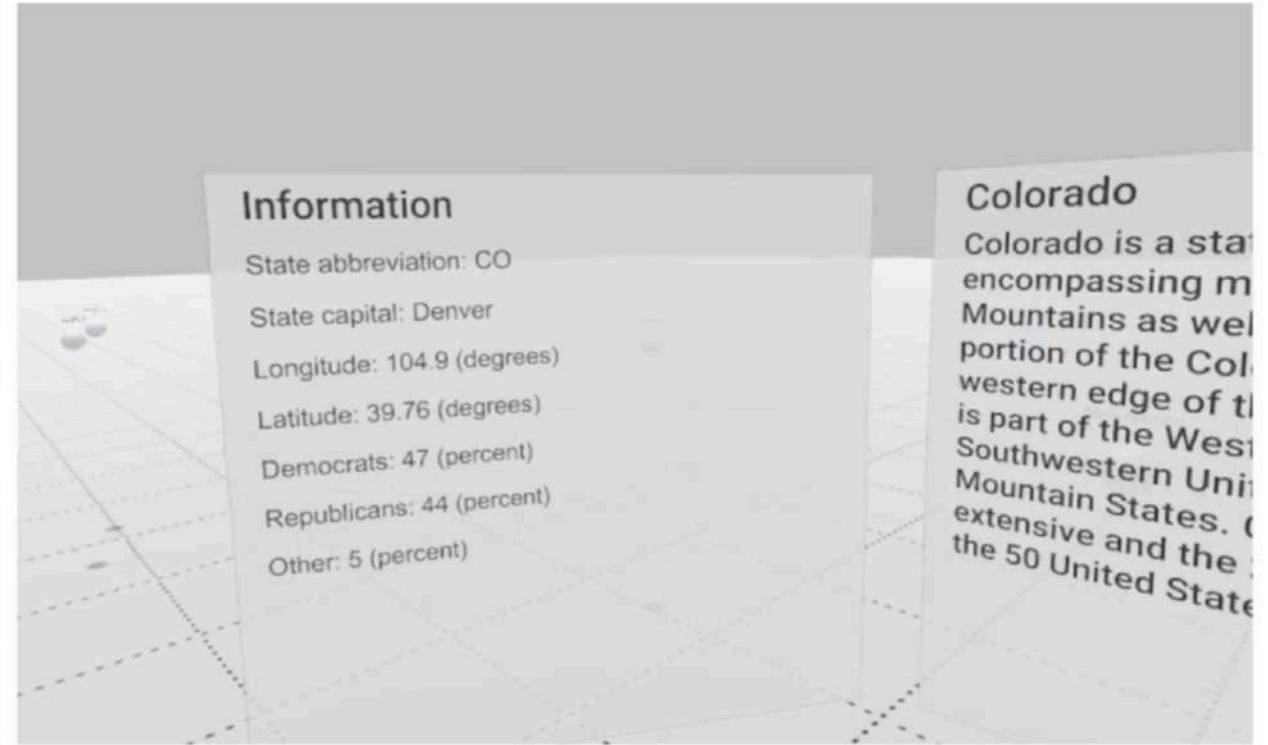
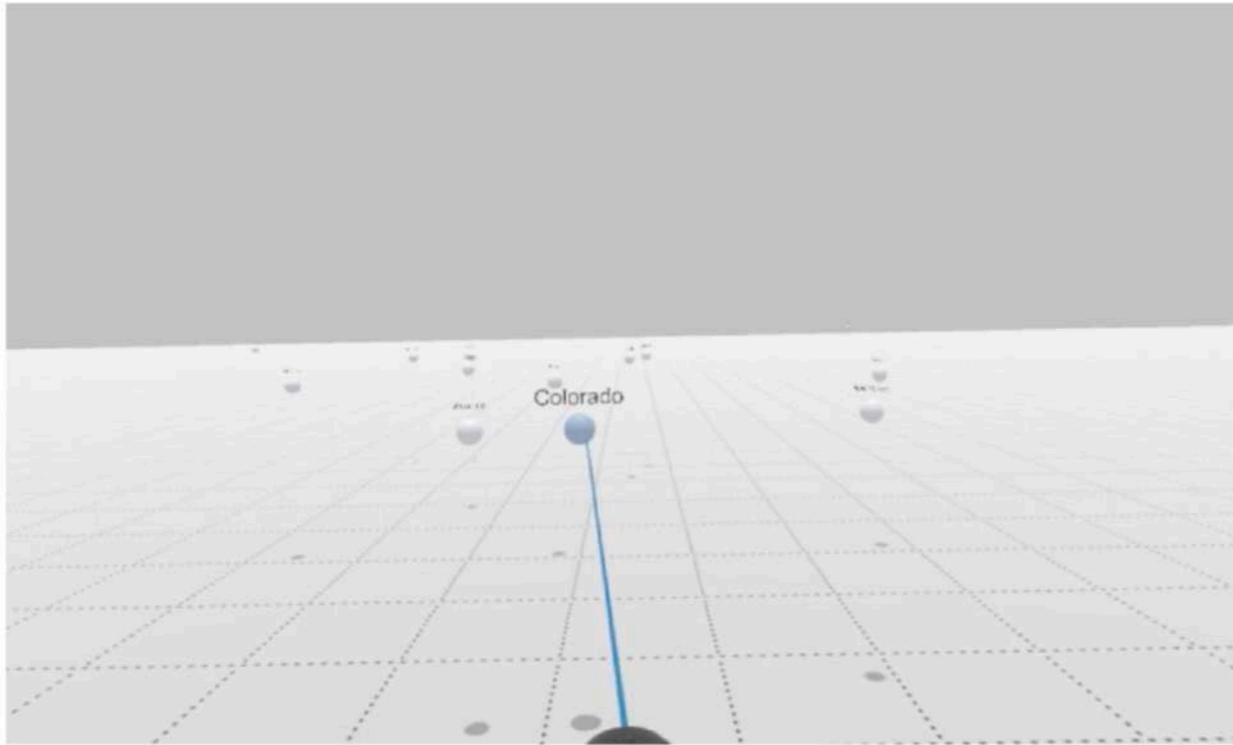
At the VRxAR Labs research group, we **create interfaces** that allow users to **explore** and **interact with digital data** in **Virtual Reality (VR)** and **Augmented Reality (AR)** environments.



Explore Open Data in Virtual Reality



Explore Open Data in Virtual Reality



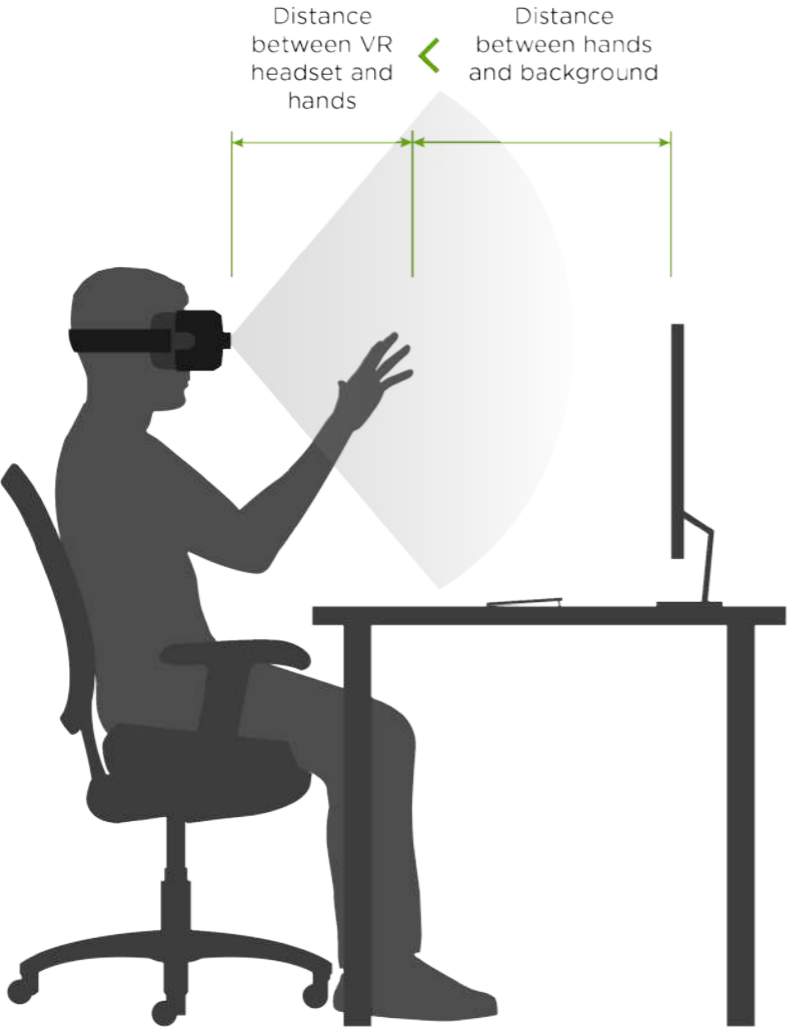
Interaction in Virtual Reality: Gaze



Interaction in Virtual Reality: Gamepad



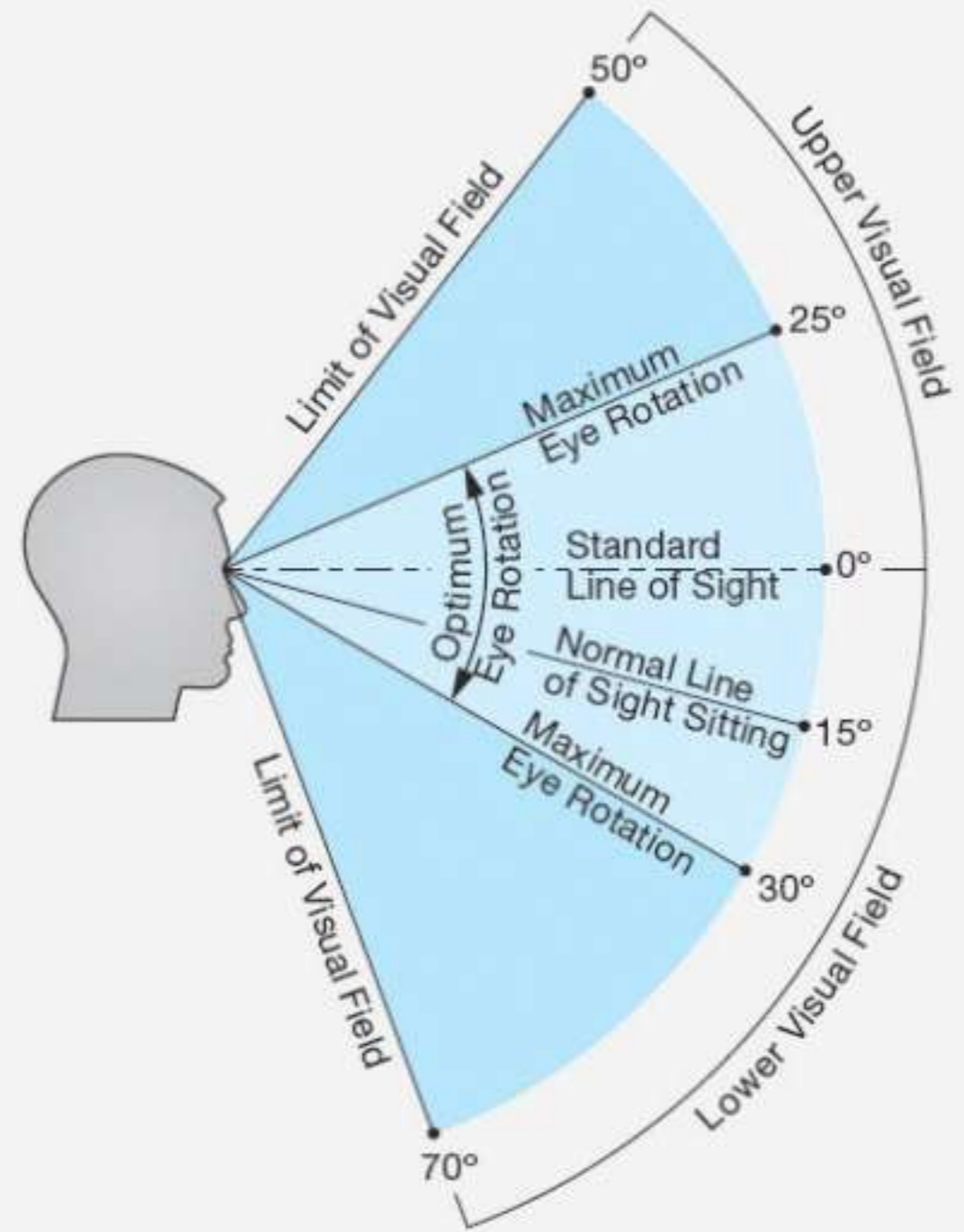
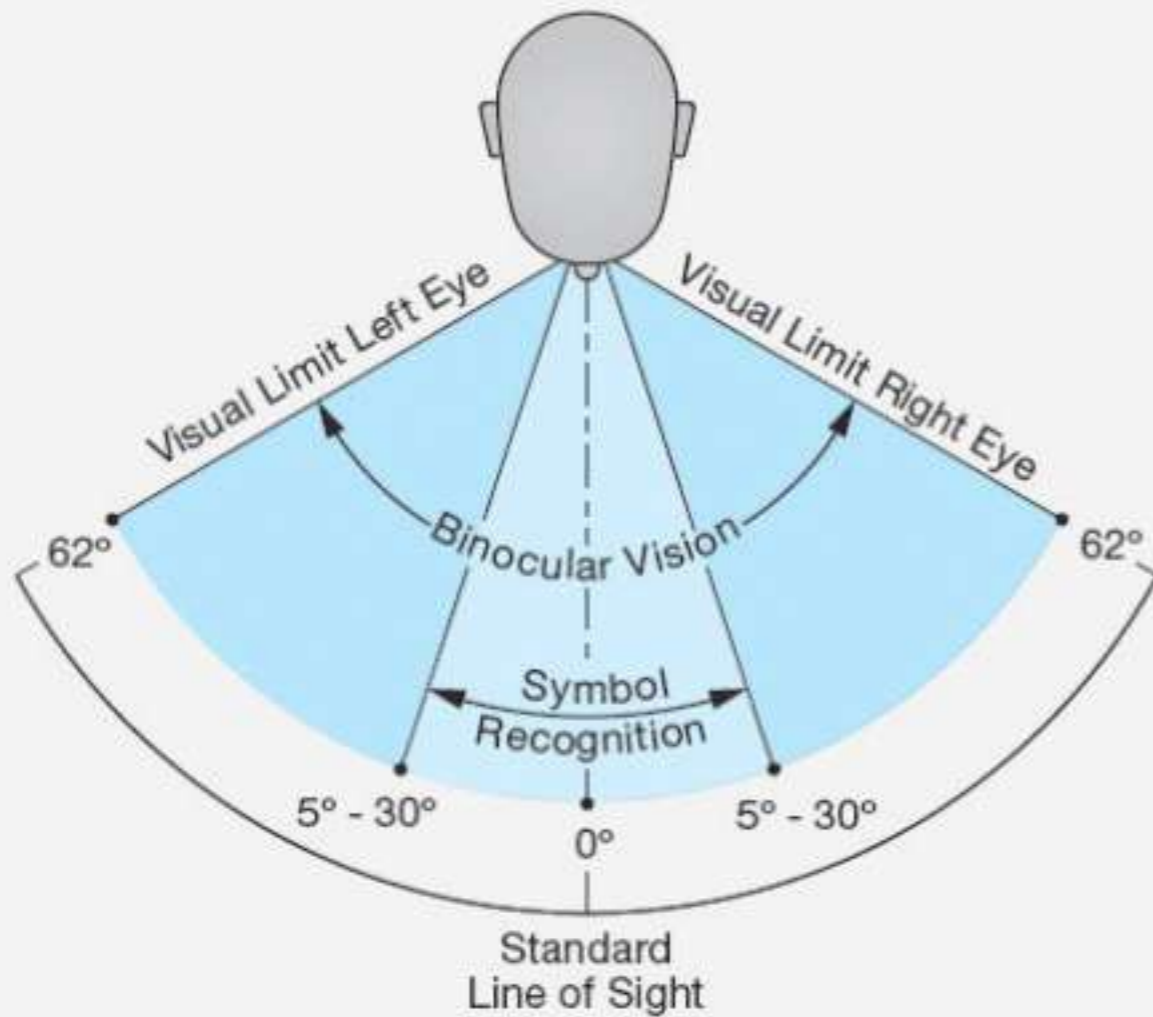
Interaction in Virtual Reality: Motion controls



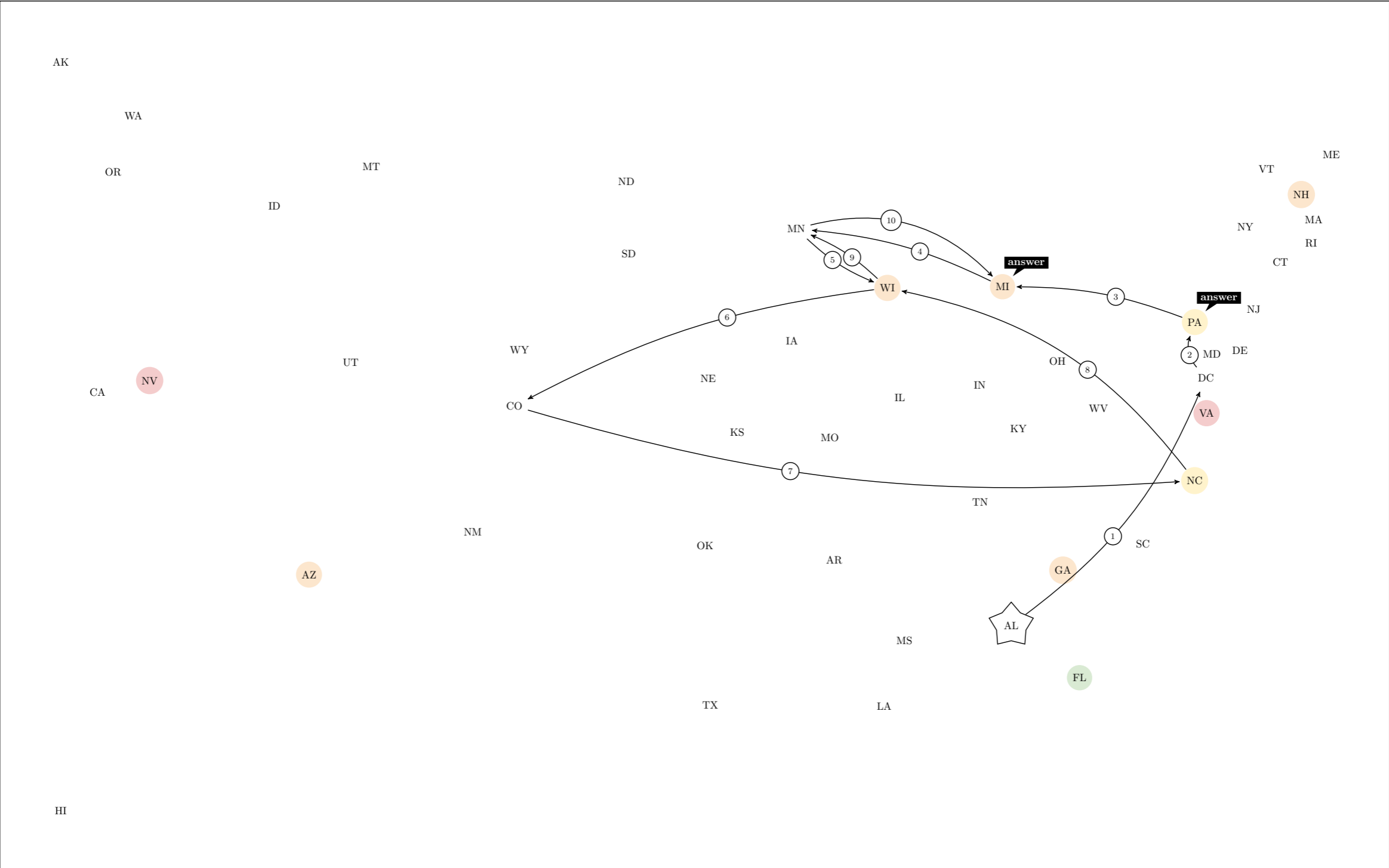
Interaction in Virtual Reality: Room-scale VR



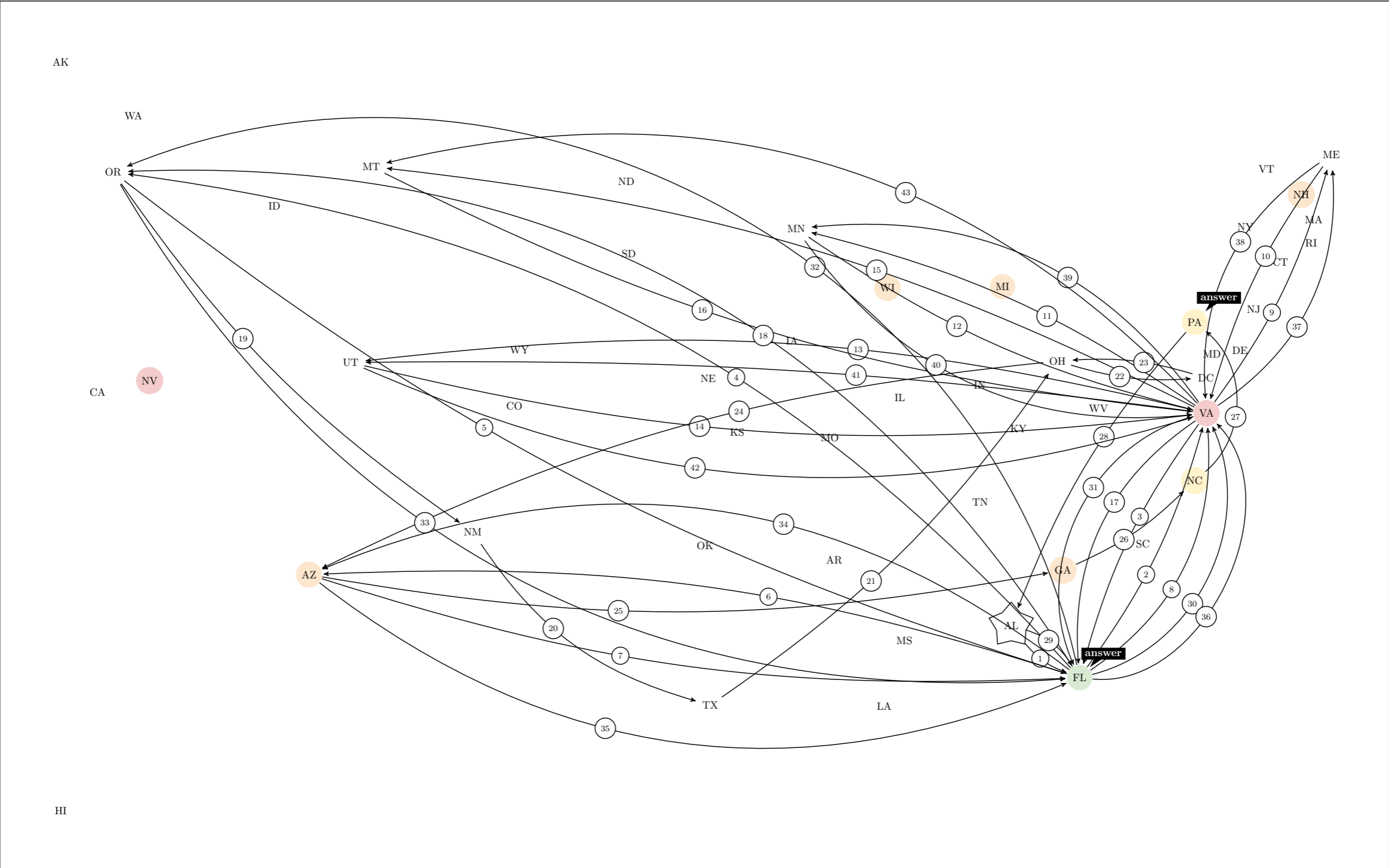
Understanding the human vision



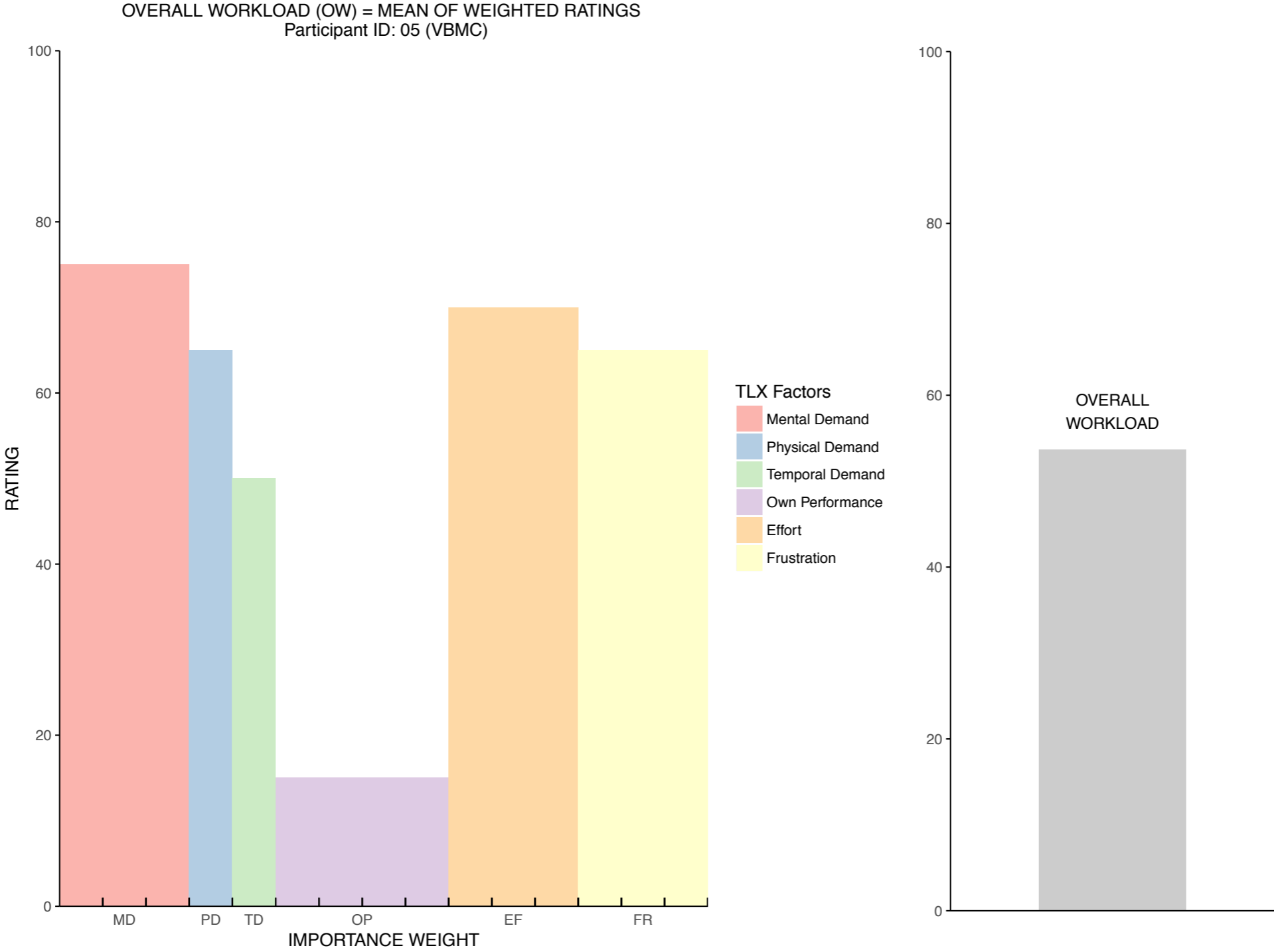
Data analysis (pathway visualization)



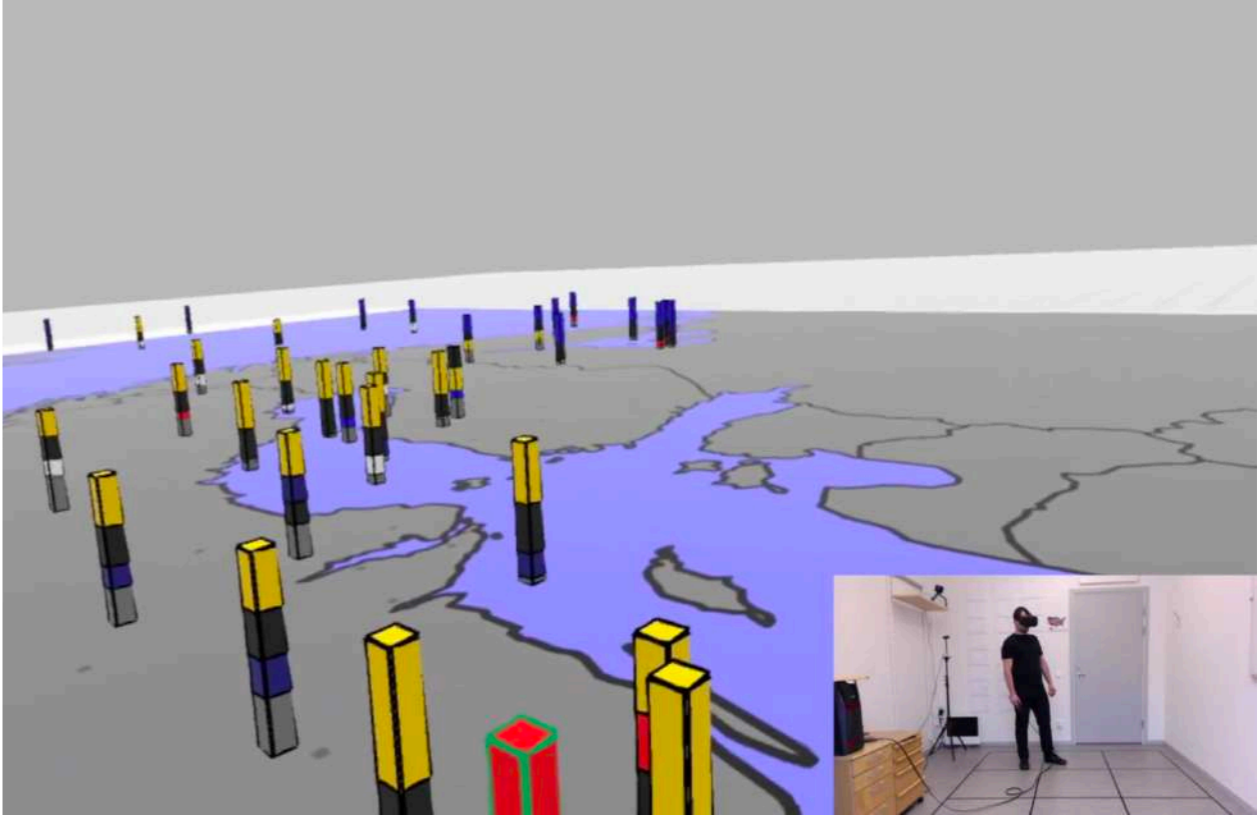
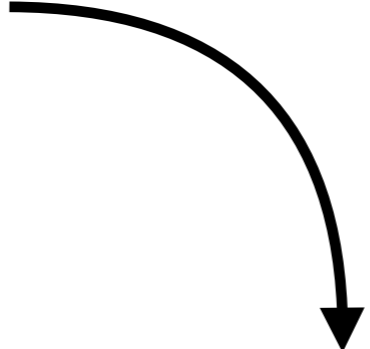
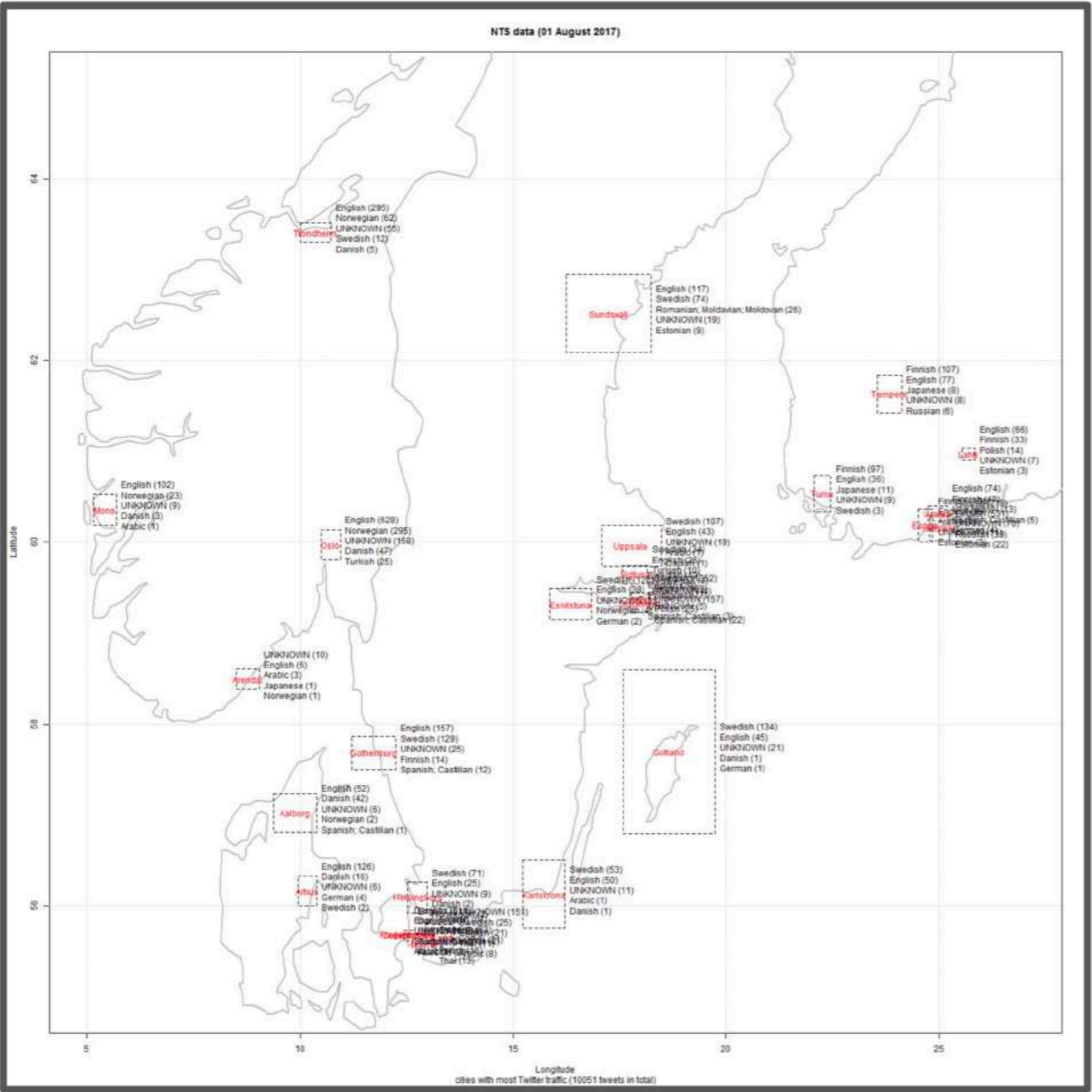
Data analysis (pathway visualization)



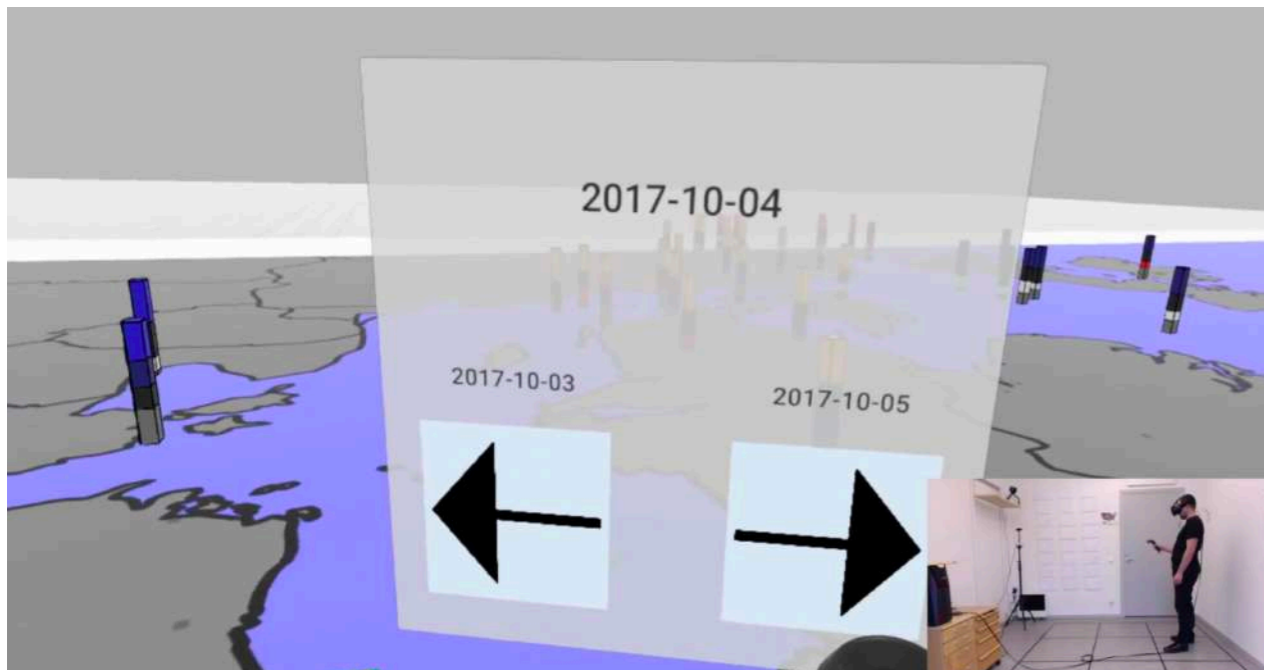
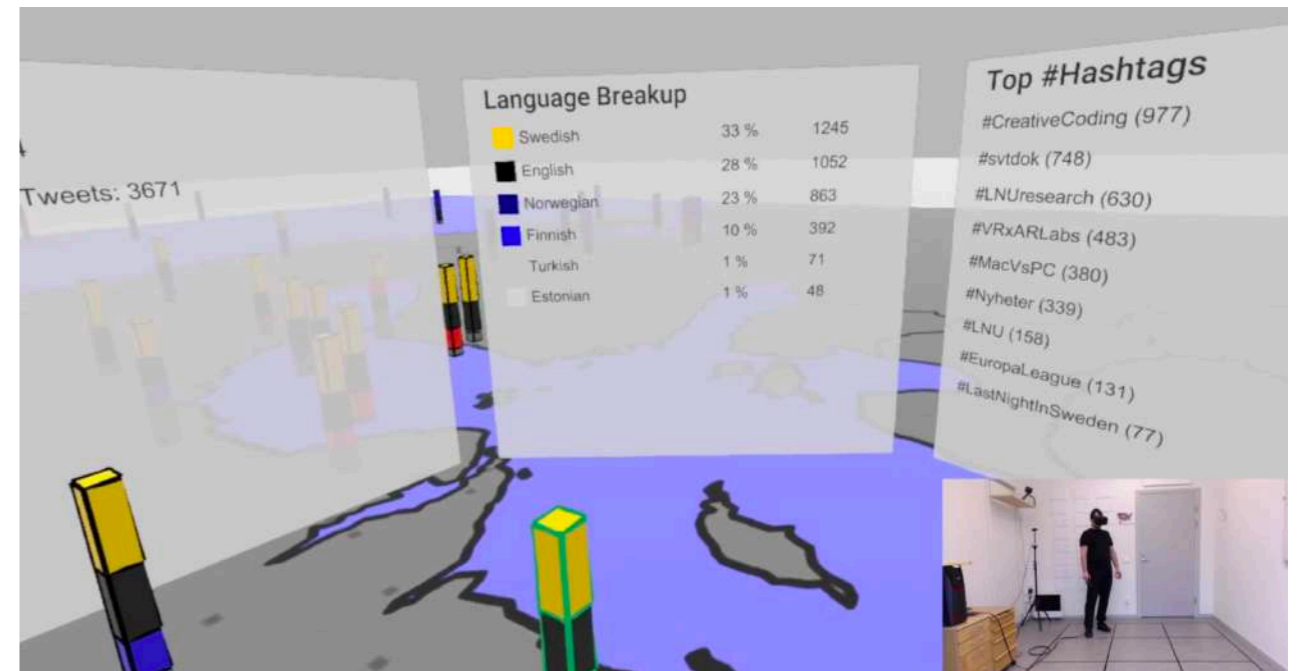
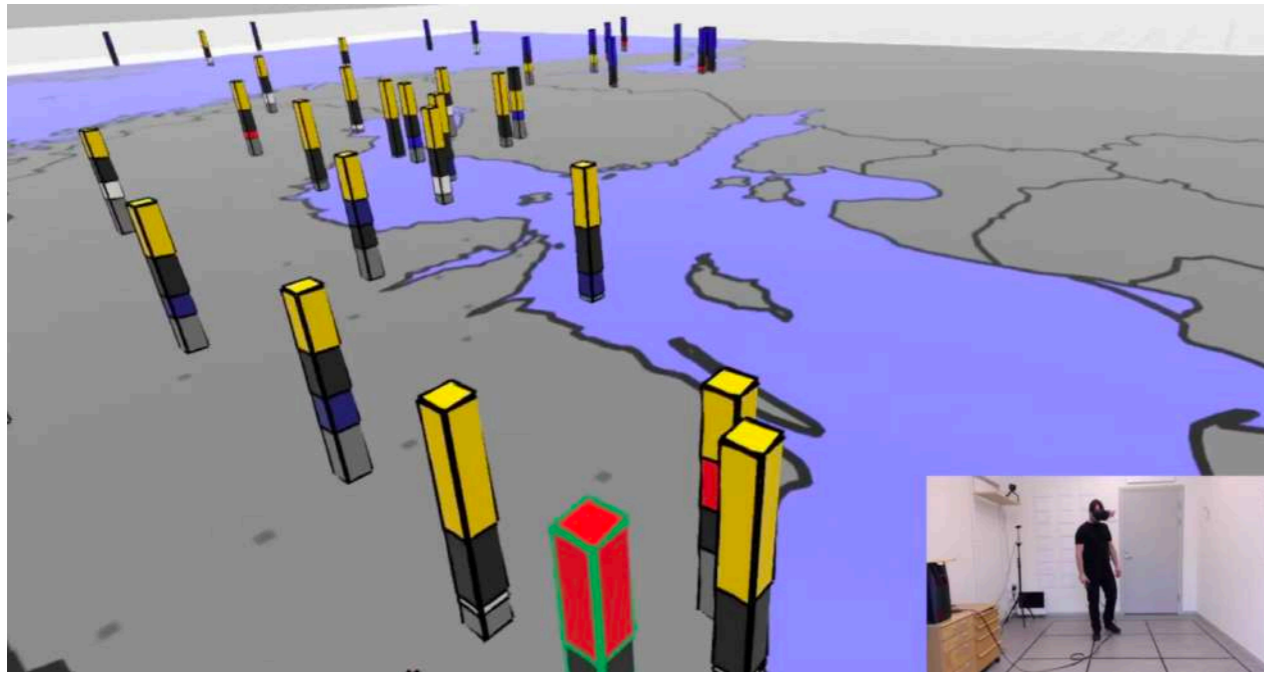
Data analysis (workload)



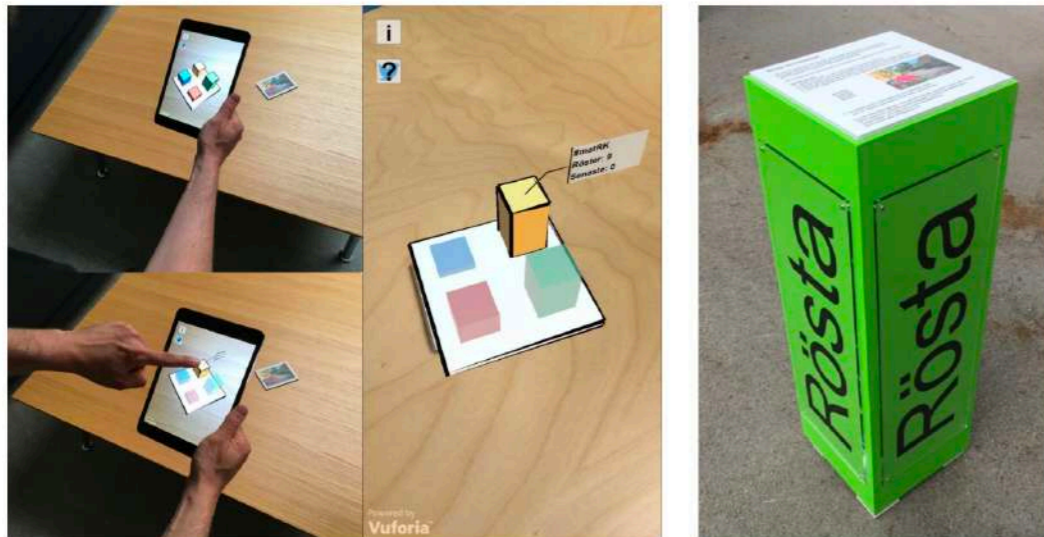
Exploring the Nordic Tweet Stream in VR



Exploring the Nordic Tweet Stream in VR



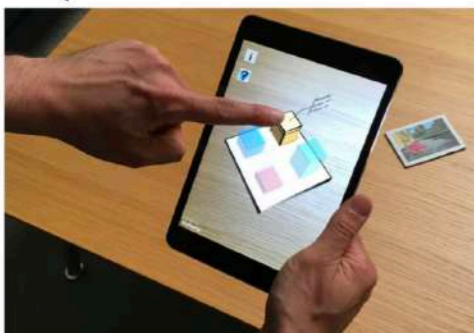
Augmented Reality to engage with the public



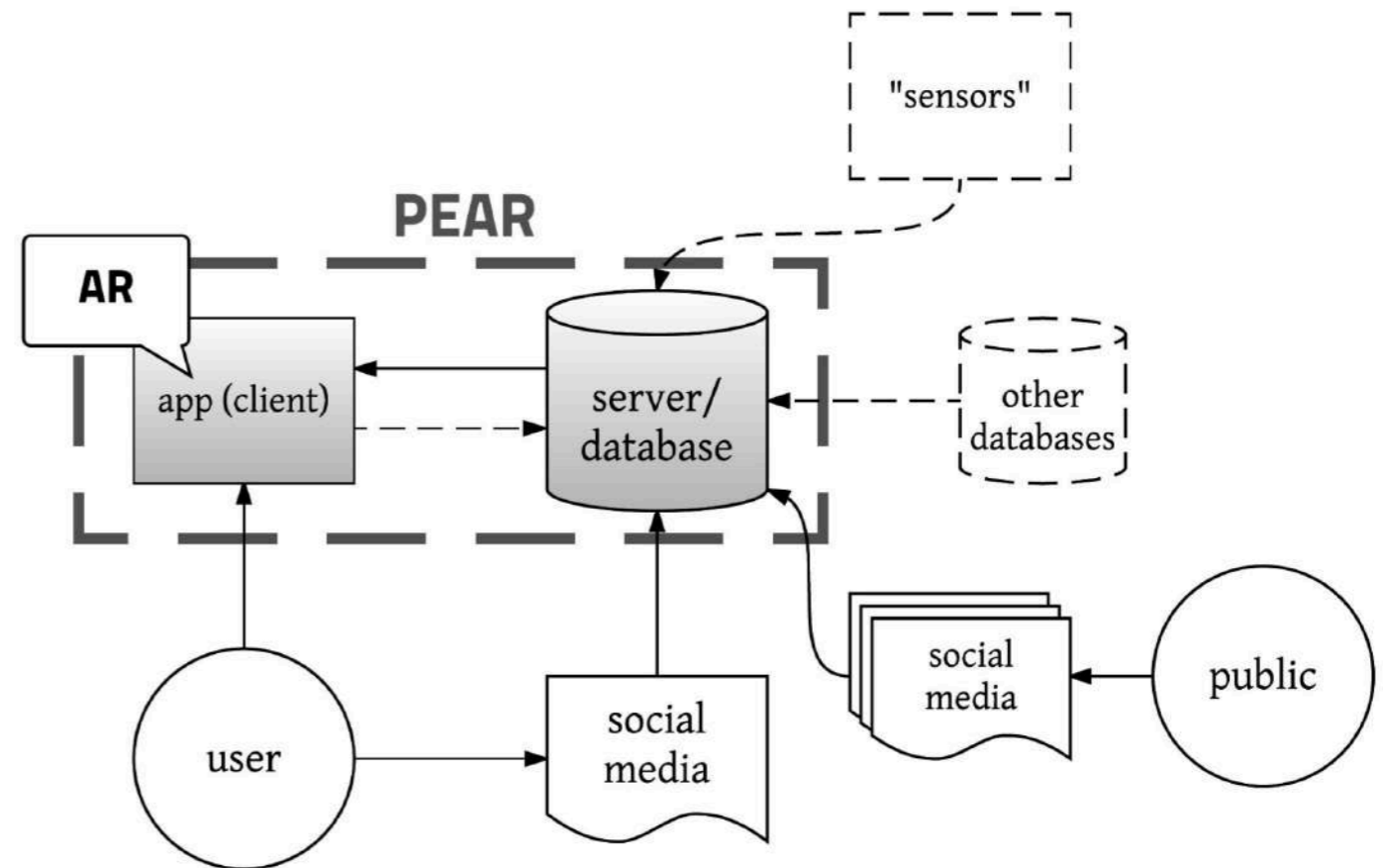
PEAR 4 VXO
Augmented Reality for Public Engagement



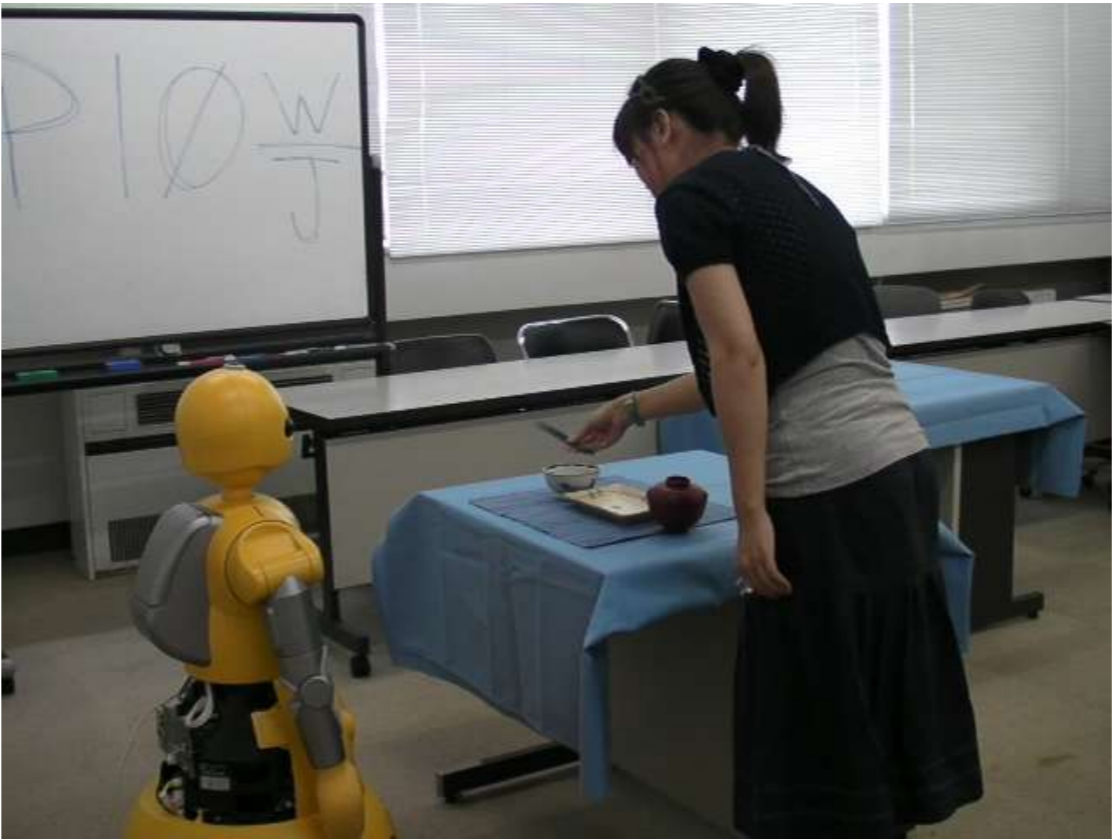
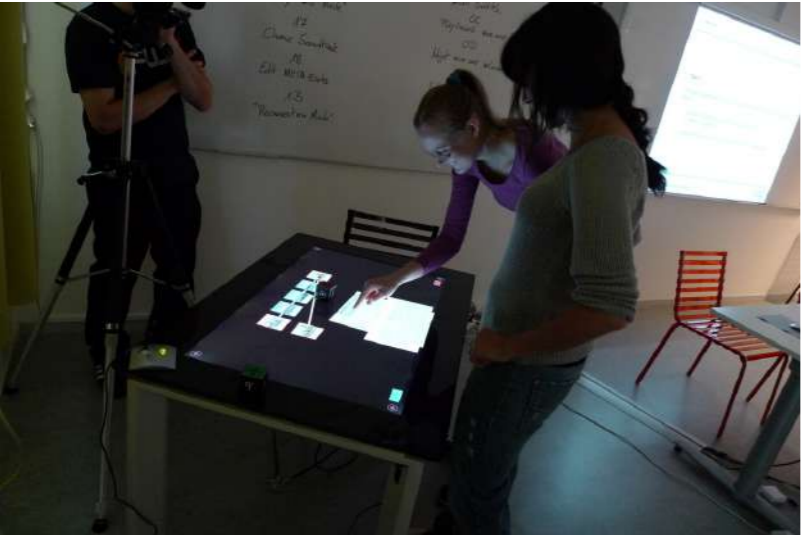
(1) Post a Tweet incl. **@Vaxjokommun** and **#votingOption** using your Twitter account.



(3) View and interactively explore the latest results by scanning the marker.



How come we started to do research?



Contact

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