



**Minerva Center**  
for human intelligence  
in immersive, augmented  
and mixed realities



## **Minerva Center for human intelligence in immersive augmented and mixed realities seminar series**

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University of Haifa

**Monday, Feb 19 at 14:15**

Sharet Building  
Room 214

### **What can we learn from eye tracking in virtual reality?**

The integration of eye tracking technology into virtual reality (VR) has ushered in a new era of experimentation, offering unique insights into human behavior. In this presentation, I will explore how eye tracking in VR unveils the intricacies of visual exploration within immersive environments, particularly in relation to memory and the interpretation of complex scenarios.

In one set of studies, participants committed either a mock crime or an unrelated task. Subsequently, both guilty and innocent participants were immersed in a VR image of the crime scene, to which several salient modifications were made. Guilty individuals looked more (effect size = 0.88) and earlier (effect size = 1.00) on these alterations compared to their innocent counterparts. Notably, distinguishing between guilty and innocent participants based on their eye movements towards the modified areas proved significantly effective (AUC = 0.75). In a next study these results were replicated, and the effect of scene modifications was further examined. Except from shedding light on how attention deployment relates to memory, these studies offer promising implications for forensic applications.

In a separate set of studies, participants observed a tense scenario in VR depicting two Palestinians attempting to navigate a checkpoint guarded by soldiers who suspected one of them of carrying explosives. Interestingly, divergent interpretations emerged among observers, with some anticipating the soldiers to open fire while others disagreed. These distinct viewpoints were reflected in different patterns of scanning, highlighting the nuanced connection between visual exploration and situational interpretations.

In conclusion, I will explore the advantages of employing VR in eye tracking research and offer insights into the potential future trajectory of the field.