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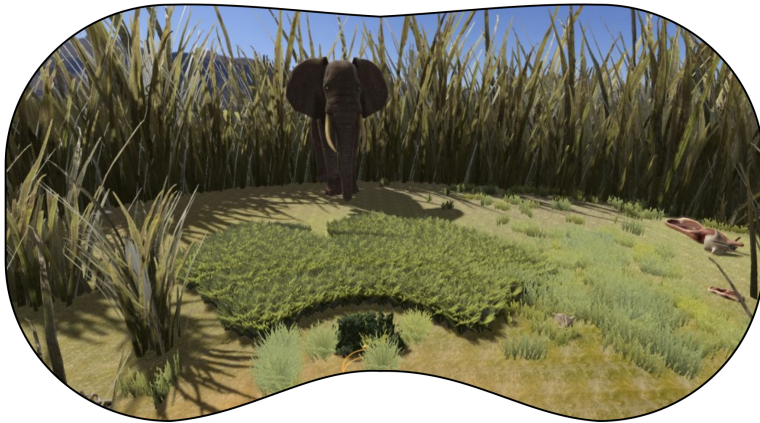
VRthreat Toolkit for Unity

Unity-based Virtual Reality Platform for design of behavioural experiments involving responses to threat

Product Specification

Unity-based Virtual Reality Platform for design of behavioural experiments involving responses to threat.

Description

An immersive VR toolkit for the Unity engine that allows assessing threat-related behaviour in single, semi-interactive, and semi-realistic threat encounters.

- The toolkit contains a suite of **fully modelled naturalistic environments**, interactive objects, animated threats, and C#-scripted systems.
- These modelled environments can arranged by the user to **create experiments**, in the form of a series of independent "episodes" in immersive VR.
- Several specifically designed tools aid the design of these episodes, including a system to allow for pre-sequencing the movement plans of animal threats.
- Episodes can be built with the assets included in the toolkit, but also easily extended with **custom scripts, threats, and environments** if required.

- During the experiments, the software **stores behavioural**, **movement, and eye tracking data**.

The current version contains the following animated threats: hand-fighting human, stone-throwing human (conspecific); bear, panther, crocodile (predatory); elephant, viper, wasp (self-defending feral); bull, dog (self-defending domestic); spider, scorpion, rat (disgust-eliciting); falling rocks, collapsing bridge (inanimate); time bomb, robot (artificial).

Sample experiments generated with the VRthreat Unity Software can be found here: https://osf.io/2b3k7/

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Reference: Brookes J, Hall S, Frühholz S, Bach DR (2023). Immersive VR for Investigating Threat Avoidance: the VRthreat Toolkit for Unity. Under review at Behavioural Research Methods.

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References

Sporrer JK, Brookes J, Hall S, Zabbah S, Serratos Hernandez UD, Bach DR(2023), Functional sophistication in human escape, iScience

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