

Group: Open Group

Sub-theme: I&T for Nature (Yama)

Project Code: O-001306

Hapti glove for training (內容只提供英文版)



User Pain Points

With new individuals coming into campsites and parks, a few issues include training staff to help individuals look after the campsite, handling individuals better when they make mistakes, and teaching individuals case scenarios when interacting with the greenery and wildlife. Training can require a lot of time and cost; in some cases, it can be dangerous to individuals. VR training has been shown to improve individual training compared to traditional audio and visual training. However, controllers limit touch interaction.

Solution Benefits

Our haptic gloves with VR make VR training more immersive by mimicking kinesthetic learning. When individuals come to the campsites, the staff can provide the system to the users and the users will experience kinesthetic, visual, and audio learning when interacting with real-like objects in VR. These include, but are not limited to animals (e.g. boars), trees, setting up campfires, etc. This will make their mind-muscle memory (or neuromuscular learning) stronger in certain situations in the campsite. By experiencing multiple-case scenarios, the users are more aware of how to behave in campsites through experience.

Organiser

Organising Partner

Technologies Applied

Our team uses our patent-pending vacuum-based technology. Vacuum-based technology utilizes bio-inspired materials when experiencing vacuum pressure. This creates resistance (or acts as a brake), miming virtual objects' shapes in VR. As the brakes are passive, the system is safe. Using soft robotics, the brakes are ultra-lightweight when wearing gloves and conformable to the hand, making them less bulky. In terms of expansion to other parts of the body, it is possible as the brakes can be of multiple sizes. As the system requires one vacuum pump, making a full resistive bodysuit would be relatively cheaper than using motors, cables, etc.

Target Users

User Profile / Persona:

The primary users of the Hapti Glove are park and campsite staff aged 25-50, tasked with managing visitor interactions and safety. These individuals need effective, immersive training solutions to enhance their skills in handling equipment, responding to emergencies, and interacting with wildlife. They value innovative tools that improve their competency and confidence in performing their duties.

User Scenario and Goals:

In training facilities, staff use the Hapti Glove to simulate real-life park management scenarios. Their goals include mastering the use of equipment, efficiently handling emergencies, and safely engaging with wildlife. This immersive training helps them reduce risks, enhance operational efficiency, and ensure a secure and enjoyable experience for park visitors.

Organiser

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