



Visual spatial attention evaluation and feedback system with virtual reality and eye tracking

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Experience: Please refer to the webpage: <https://scholars.lib.ntu.edu.tw/cris/rp/rp06358>

Market Needs:

Visual spatial attention disorders are prevalent among the populations with dementia, brain lesions, psychiatric conditions and attention deficits and it has major impact to the individuals' function. The current evaluation and training are tools include paper-based, physical or computer-based methods. They are limited in the flexibility of the stimuli, the standardization of environments and the digitalization of data. Recent studies have documented the superiority of the virtual reality (VR)-based methods in evaluation, and the potential for training for visual spatial attention.

Our Technology:

A head-mounted display virtual reality system with eye tracking technology is able to provide a standardized virtual environment to evaluate the visual spatial attention. We incorporate a tracker system, which allows the evaluator to manipulate the characteristics of the visual stimulus and record the location of the stimuli, reaction time and visual path simultaneously. The data can provide a comprehensive evaluation, and used as a real-time feedback to control the stimuli to guide the training through the software design.

Strength:

The research team is experienced in clinical care and capable to incorporate the neurocognitive knowledge in the product design. We are also familiar with the study design and methods for the clinical validation to test the usability, reliability and validity for clinical use.

Competing Products:

1. RehaCom (HASOMED®, GmbH): a computer-based cognitive evaluation and therapy system.
2. Dynavision (Dynavision®): a cognitive training device that combines eye-hand coordination, peripheral vision training.

Intellectual Properties:

We have completed the prototype of the design and will start the clinical validation and plan to write the research papers. Therefore, we would like to apply the PA or PCT before the submission of papers.

Contact (do not need to fill out):

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