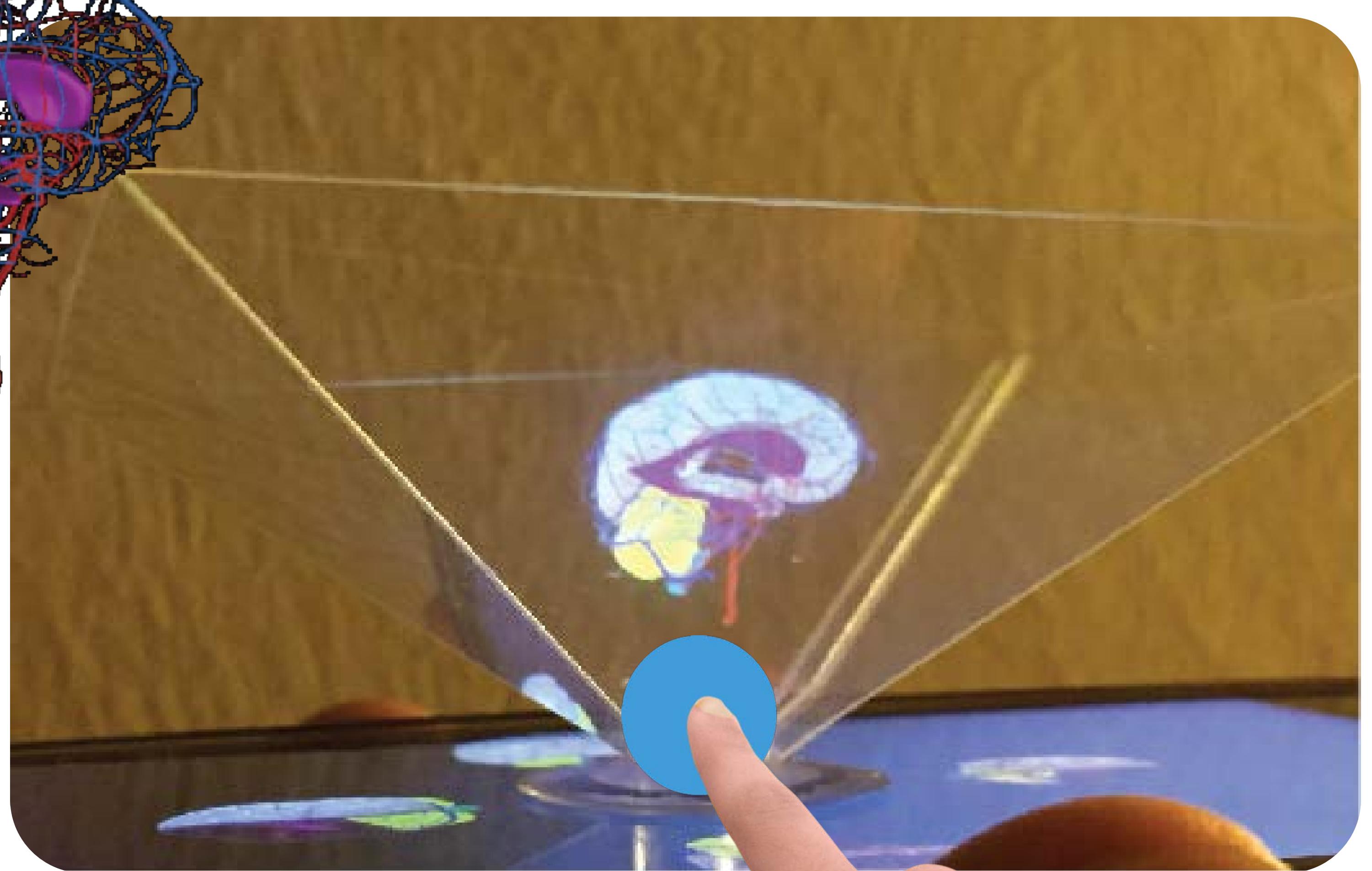
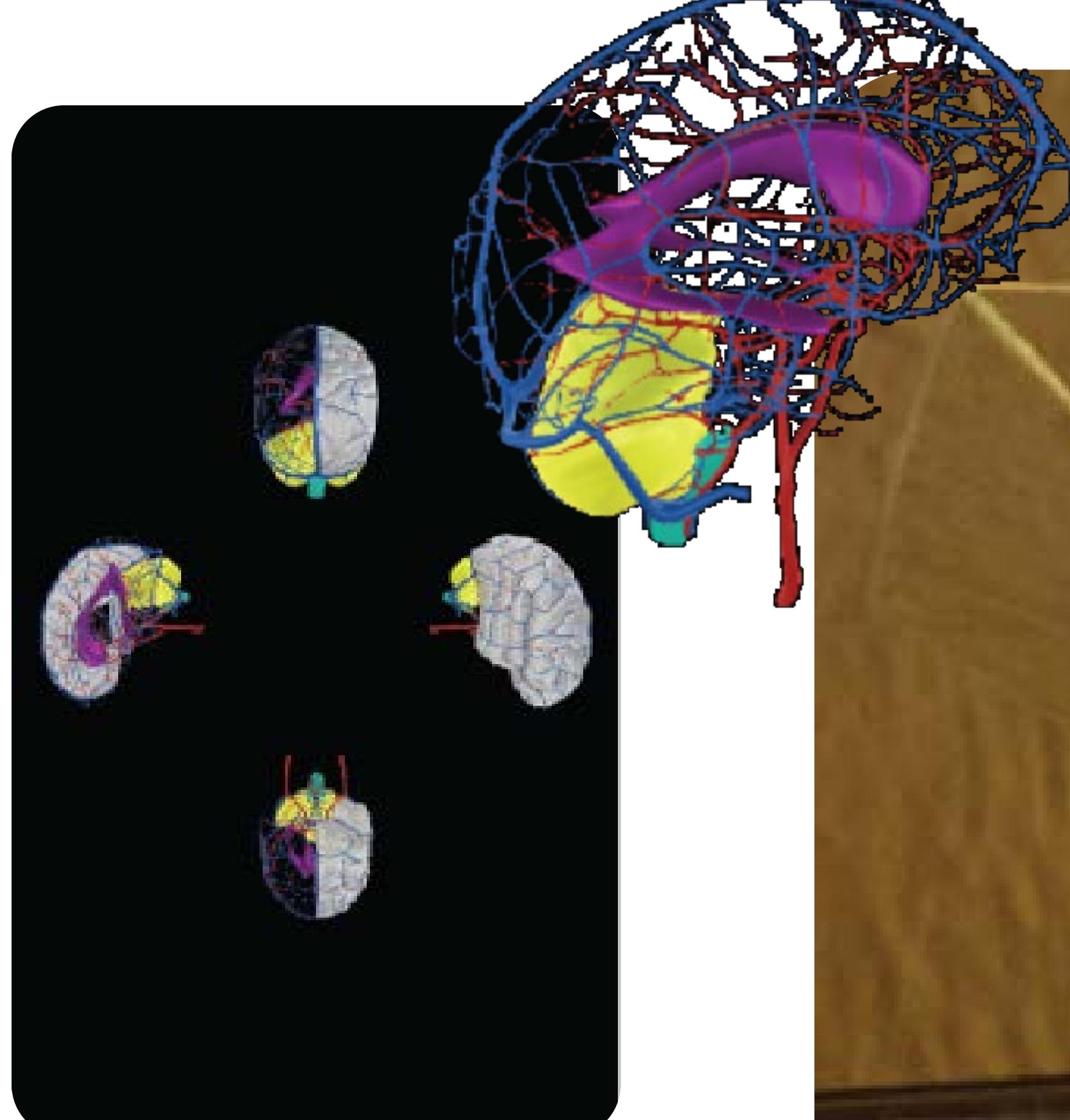
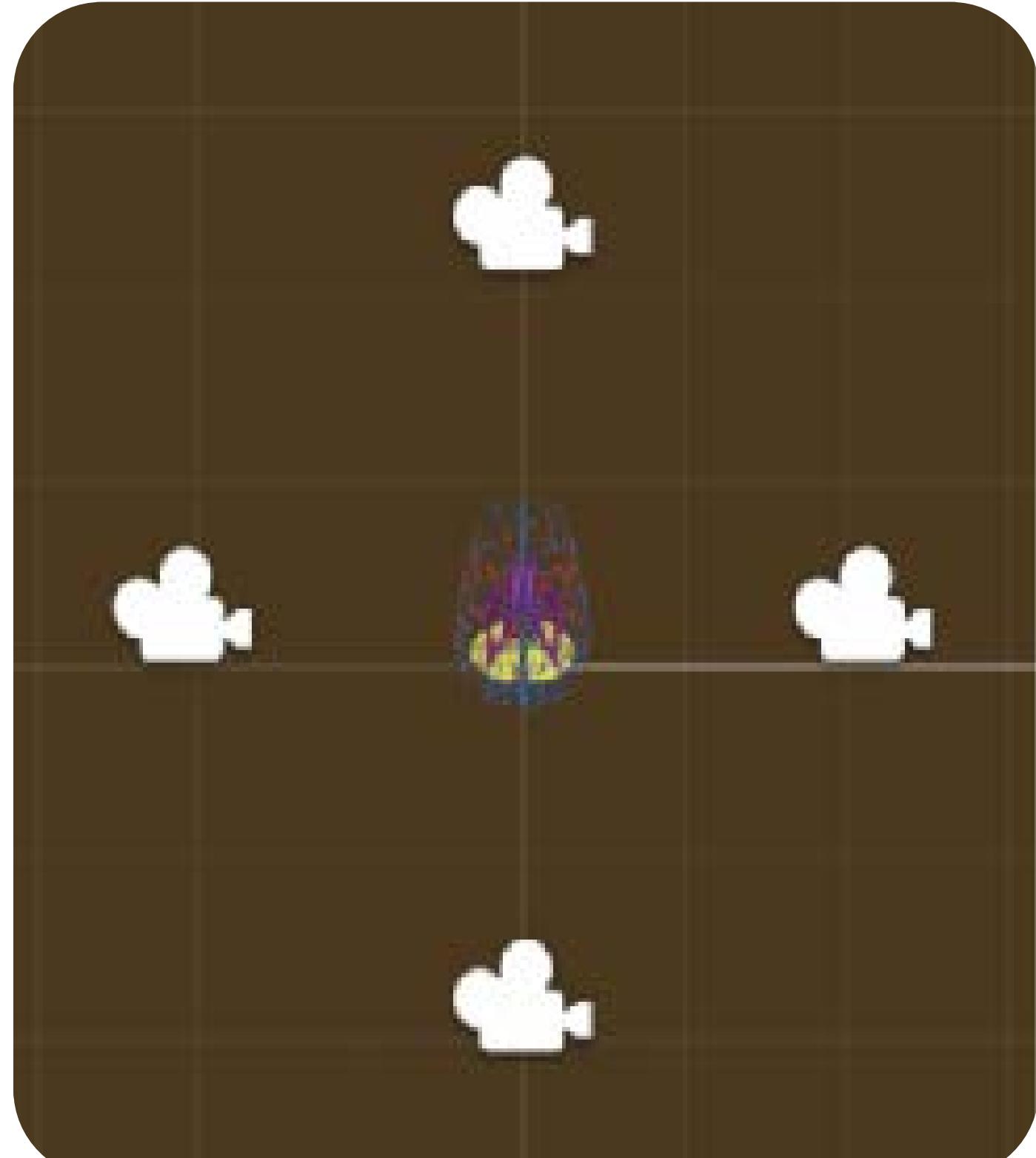


# 3D Holographic Rendering

## (An Interactive Holographic Renderer for Mobile Devices)

COPYRIGHT LY2017005482



### INTRODUCTION OF TECHNOLOGY

Using holographic viewing in mobile devices seems logical as the next step in advancing the display varieties after mixed reality phenomena such as augmented reality and virtual reality. Even though hologram is not a new technology, the real potential of holographic visualization in mobile devices has yet to be tapped, particularly interacting with available visual contents.

Holographic viewing helps the process of assimilating and understanding complex structure such as human anatomy, multipart engine structure, compound particle and able to add supplementary persona to the visual contents as well. Thus, we present an inexpensive holographic viewer using hologram pyramid in mobile devices with real time interaction, in making it available for everyone to experience hologram in their own palm.

### INVENTION

The current hologram pyramid offers on hologram display without any real time interaction to the visual content. While it is exciting to view holographic content but without interaction it will be less functional. Since it is difficult to use the normal finger interaction with the pyramid on top of mobile devices, our solution is using voice command and hybrid finger interaction with mobile sensor for more seamless interaction.

The hologram pyramid is a display that does not require extra energy and is reusable, making it an environmental friendly hologram solution. End user can be varies between end consumer to product marketer, or just plain tech nerds. With, 3D holographic renderer, creative content developer or anyone able to share their artworks in a more user friendly and economical ways.

### ACKNOWLEDGEMENT

This research was supported by Ministry of Higher Education, Malaysia, under Trans Disiplinary Research Grant (TRGS) TRGS/1/2015/UPM/02/7/2.



Project Leader	: Dr Puteri Suhaiza Binti Sulaiman
Dept./Faculty	: Multimedia Department, Faculty of Computer Science and Information Technology
Email	: psuhaiza@upm.edu.my
Phone	: 03-8947 1750
Expertise	: Multidimensional Visualization and Interaction, Mixed Reality (VR and AR) and Computer Graphics



### ADVANTAGES

The advantages of using holographic display as compared to traditional displays are as follows:

- Have four view angles (front, left , right and back) to make up a whole holographic object
- Give better depth and shape perception
- Have real time multiple interaction for holographic contents
- Give user friendly and economical ways to present digital products

### MARKET POTENTIAL

The potential for this solution can be varies between consumer to product marketer, or just plain tech nerds. Depending on the purpose, the market potential can be expandable.

### CONSUMER/END USER

- Able to experience hologram in your own palm in an inexpensive and user friendly solution.

### INDUSTRY APPLICATION

- To display and share their product perspective in more appealing approach and better understanding.
- An alternative to replace broacher in explaining the industry/company product.