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Title: A head mounted three dimensional display

Overview

In this paper, Ivan Sutherland presents his recent invention for virtual reality by utilization of a large head machine, connected to his image display via matrix multiplier equipment. This was proven to successfully allow users to equip the head machine and appropriately see images that could be spaced close or far, and visually 'feel' their distance. A few minor errors noted were that special recognition sometimes proved difficult, as when they could not appropriately get the top view of the cyclo-hexane chemical.

Type of Paper

The paper was a presentation of a novel system during the time.

Primary Contributions

It is highly emphasized the rate at which the matrix transformer works. Because of this, I believe that the matrix transformer is a good new contribution to the field. Additionally, it seems that the math to display 3d images into the space is novel as shown in Figure 7 of the paper. While it is unsure if a head display has been presented before, the paper also emphasized greatly that the clipping divider was a very favorable part of the system because it complements the matrix transformer in that it turns 3d images to 2d referential points.

Relations to prior work in the field

Based off of the references, prior work done within the field pertaining to this involve the clipping divider, which was essential to the setup. It also looks like there were issues with creating proper perspectives of images prior to this, so the ability to create accurate perspectives for a user would have been pretty novel since the time difference between the references and the paper itself was 2-3 years.

Relations of this work to other work in the same timeframe

Based off of a search of this relative time period, other papers begin to emphasis augmented reality and some of the hype and excitement that came with it at the time. This makes sense, as there would need to be a strong interest in the field for propelled growth.

Further interesting things

I found the transformation between 2d and 3d via page 761 really cool and interesting. Importantly to myself, it was also the area that introduced more of the mathematical concept between the system, whereas the rest of it was an explanation. The paper also read like a person would explain to an audience, rather than a patent. This is exacerbated at the end where Sutherland makes appreciation remarks.