

3D Visualization

Stereopsis is the brain's amazing ability to instantaneously combine two slightly different views into a single three-dimensional perception of the world around us. It's the primary reason we have two eyes...

We are born with this ability to experience a three-dimensional world. Wouldn't it make sense that we are better 'wired' to extract more information and even understand it better if it is presented to us using stereoscopic visualization?





Ongoing scientific research papers reveal that this is indeed the case. Through the use of moving stereo 3D graphics one can perceive substantially more data^[1,2]. More complex concepts and structures become easier to interpret^[2], and easier for users to understand^[3], with smaller error rates^[4,5] and better attention^[6]. Even abstract concepts become easier to comprehend^[7].

Simply put, the human brain prefers stereo 3D layouts! [2,8]

Thus Stereoscopic Visualization is perfect at communicating complex technical data and rendering it comprehensible to your audience in a natural, and exciting way. It's no wonder Intel Architecture Labs has predicted that true 3D user interfaces will predominate in tomorrow's market^[9].

Lightspeed Design specializes in the creation and display of stereoscopic content, and can tackle even the most difficult aspects of stereo creation, including live-action shooting with and without blue screen, 2D to 3D conversions, 2.5D element creation, and the accurate and transparent compositing of computer-generated elements with live-action. We have developed many in-house tools and techniques to accomplish this, and we are constantly researching the latest 3D stereoscopic presentation technologies, from active/passive polarization and LCD shutter glasses for flicker-free presentation on computer monitors & DLP video projectors, to fully autostereoscopic displays (no glasses).

Over the years Lightspeed Design has used stereoscopic visualization to introduce the science behind shampoo, the physics of flight, the interdependence of life, the structure of water, and the inner workings of the human brain. Lightspeed's artists have also brought a tremendous level of excitement to product launches and public relations events through stereoscopic presentations for Proctor and Gamble, Nike, Sony, Boeing and Nintendo.

With over 20 years of stereo experience and multiple stereo productions under our belt, including **Threatened Ocean** for the Pavilion of the Future at Expo '98, Lightspeed Design is well-equipped and excited about the future of this exceptional medium.

Let us add another dimension of understanding and excitement to your message.

- [1] Ware, C. and Franck, G., "Viewing a Graph in a Virtual Reality Display is Three Times as Good as a 2D Diagram", in Conference Proceedings of IEEE Visual Languages, October 1994, pp. 182-183.
- [2] Ware, C. and Franck, G., "Evaluating stereo and motion cues for visualizing information nets in three dimensions", ACM Transaction on Graphics, vol. 15, no. 2, April 1996, pp. 121-140.
- [3] Hubona, G. S., Shirah, G. W., and Fout, D. G., "3D Object Recognition with Motion", in Proceedings of CHI'97, 1997, pp. 345-346.
- [4] Ware, C. and Franck, G., "Representing Nodes and Arcs in 3D Networks", in Proceedings of IEEE Conference on Visual Languages, St. Louis, October 1994, pp. 189-190.
- [5] Ware, C., Hui, D., and Franck, G., "Visualizing Object Oriented Software in Three Dimensions", in Proceedings of CASCON'93, Toronto, Ontario, Canada, October 1993, pp. 612-620.
- [6] Jones, R. K. and Lee, D. N. Why two eyes are better than one: the two views of binocular vision. Journal of Experimental Psychology: Human Perception and Performance, 1981, 7, pp. 30-40.
- [7] Kurnar H., Plaisant C., Teittinen M., Schneiderman B., Visual Information for Network Configuration, University of Maryland CS technical reports, Maryland, USA, June 1994.
- [8] Purcell, D.G. and Stewart, A.L. The object detection effect: Configuration enhances perception, Perception and Psychophysics, 1991, 50(3) pp. 215-224.
- [9] Light, J., Intel Architecture Labs, Visualization of Information and Data: Where We Are and Where Do We Go From Here?, CODATA Euro-American Workshop, Toward a Unified Visual Representation of Documents and Concepts, June 1997, pp. 24-25.

