

Workshops and Panels VSMM 2007

Workshop 2 - Stereoscopy

Stereoscopy: Theory and Practice.

Presenters: Paul Bourke, Peter Morse.

Duration: 4 hours + discussion and photographic workshop.

Summary

This workshop will cover a wide range of topics related to stereoscopy from both a theoretical and practical point of view. It will include a comparative discussion of the technology both now and in the future as well as cover how one creates effective stereoscopic content.

Specific topics that will be covered are: the creation of synthetic stereoscopic pairs, still photography and video capture, viewing/projection options and their relative merits, the limitations inherent in the current technology, some of the new and future possibilities for stereoscopic viewing/projection, and how to create content exhibiting minimal eye strain. A stereoscopic viewing system will be available to illustrate the various principles and to show examples of work from practitioners in the field.

This workshop is targeted at a general audience, some experience or knowledge of digital image processing and 3D modeling/rendering would be an advantage. Programming or an in depth knowledge of a particular 3D package is not expected although the presenters will be available to discuss more technical questions at the end of the workshop.

By the end of the workshop attendees will have a general overview of the whole field as well as a good foundation of the underlying theory and therefore be able to independently address issues and problem solve in this field.

Attendees interested in stereo photography are encouraged to bring a digital camera and laptop (with image editing software) and experiment capturing, editing, and presenting images on the projection system provided.

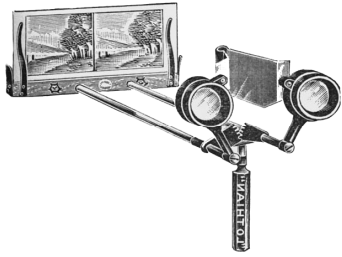
Course outline

Morning session

- Introduction to theory and terminology. Depth cues, parallax, off-axis frustums, etc.
- Computer generated stereo pairs, still and animation, realtime and rendered.
- How to create optimal stereo content that is easy on the eyes, the tricks of the trade.
- Survey of the various presentation technologies and a discussion of their relative merits.
- Stereoscopic photography and filming including image restoration.

Afternoon session

- Special topics, unique environments, opportunities in the future.
- General question time and an opportunity for more technical discussions.
- Photographic exercises by attendees (Optional).



Lothian stereoscope 1895



Polaroid glasses, 1995



Infitec glasses, 2005

Presenters

Paul Bourke has been presenting data and virtual environments in stereoscopic 3D for over 10 years. This has included the design of a number of systems mainly targeted at scientific visualisation, public education, and exhibits for museums and art galleries. He has been involved in a number of innovative stereoscopic displays and consults widely in the field.

Peter Morse has been involved in stereoscopic photography and film for a number of years. Much of this work revolves around a research project "antartica vitua" which has included the restoration of stereoscopic photographs from the turn of the century as well as capturing stereoscopic images, film, and panoramic pairs from Antarctica. This work has been exhibited at the John Curtin gallery and currently on exhibition at the Tasmania Museum and Art Gallery.