Computer Graphics for Large-Scale Immersive Theaters

Resources

Course # 25
This bibliography is provided for those wishing to research spherical display history, applications and related technologies. Following the alphabetical listing, sources are listed according to category. These sources span many disciplines, including planetaria, immersive projection technologies, motion simulation, psychophysics and cognitive science, military systems, virtual reality and computer graphics. We have also added a list of related web links, professional societies and vendors. We hope you find it useful.


[Conley 93] Dave Conley and Garry Musgrave, “Big Video is in the Stars,” The Planetarian, Vol. 22, No. 4, pp. 5-8,20, December 1993


http://www.humnet.ucla.edu/Icono/rapotter/panoram.htm


http://members.aol.com/sheddprod2/papers.html#Designing

[Shedd 97/1] Ben Shedd, “Designing for the Dome,”
http://members.aol.com/sheddprod2/papers.html#the%20Dome

[Shedd 97/2] Ben Shedd, “Exploding The Frame,”
http://www.cs.princeton.edu/~benshedd/ExplodingtheFrame.htm


[Skolnick 95] Leonard P. Skolnick and Peter Bolsaitis, Brightness and Contrast Consideration in Projection on Large Format Curved Surfaces, 3D Structures, Inc., Avondale, PA, 1995


BIBLIOGRAPHY BY TOPIC

AUDIO SYSTEMS


DOME DISPLAYS


EDGE BLENDING VIDEO


ENTERTAINMENT SIMULATORS


FILM AND HISTORY OF IMMERSIVE MEDIA


IMMERSIVE VIDEO IMAGING

INTERACTIVITY


LASER DISPLAYS

http://www.siliconlight.com/htmlpgs/glvmaintframeset.html


PLANETARIA: HISTORY AND USE


**PLANETARIA: VIDEO AND COMPUTER GRAPHICS**


**PSYCHOPHYSICS AND COGNITIVE SCIENCE**


SPHERICAL RENDERING AND MAPPING


**STEREOSCOPIC DISPLAYS**


**STORYTELLING AND PRODUCTION**


**TRAINING SIMULATORS**


**VIRTUAL REALITY**


OBTAINING HARD-TO-FIND SOURCES

Tile Conference Proceedings
Andrich International Limited
51 Market Place
Warminster
Wiltshire BA12 9AZ, UK
Tile@andrich.com
www.andrich.com/tile

Image Conference Proceedings
The Image Society, Inc.
PO Box 6221
Chandler, AZ 85246-6221
E-mail Image@asu.edu
Web: www.public.asu.edu/~image

The Planetarian
International Planetarium Society
John Mosley, Executive Editor
2800 East Observatory Rd.
Los Angeles, CA 90027
tel (323) 664-1181
fax (323) 663-4323
Web: www.griffithobs.org/IPSPlanetarian.html
TRADE ORGANIZATIONS

Giant Screen Theater Association

The Giant Screen Theater Association (GSTA), is a network of organizations and individuals that are involved with or interested in the large-format screen industry. The GSTA was founded in 1977 by four educational institutions that housed 15 perforation/70mm projection equipment. The goal of the GSTA was to foster information exchange and to work collaboratively on film production. The organization is incorporated as a nonprofit group. The GSTA has grown steadily since 1977 and currently has 81 regular members, 60 developing members, and 204 associate members, representing 31 countries. In addition to the 15 perforation /70mm theaters, GSTA also welcomes 8 perforation/70mm and 10 perforation /70mm theaters as Theater Members. The organization is not directly involved in film production, although individual members and groups of members have produced large-format films.

Contact:
Maureen Mullin
GSTA International Office
444 Cedar Street, Suite 810
US Bancorp, Piper Jaffray Plaza
St. Paul, MN 55101, USA
Phone (651) 292-9884
Fax: (651) 292-9901
e-mail: maureen@giantscreentheater.com
http://www.giantscreentheater.com

Large Format Cinema Association

The Large Format Cinema Association is a non-profit corporation created to benefit the large format cinema community of film makers, distributors, equipment manufacturers, consultants, exhibitors and others. Membership and full participation are available to all, without reference to specific film or video format.

Contact:
Executive Director: Jeannie Moore
28241 Crown Valley Parkway PMB 401
Laguna Niguel, CA 92677, USA
tel. 949/831-1142, fax 949/831-4948
e-mail: Jmoore@lfca.org
http://www.lfca.org/
**International Planetarium Society**

The International Planetarium Society is the largest organization of professional planetarians in the world. It is made up of members from nearly every continent, and has nearly 20 smaller affiliate organizations. Publications include the “Planetarian” quarterly journal and directories of planetariums.

International Planetarium Society  
C/o Taylor Planetarium  
Museum of the Rockies  
Montana State University  
600 W. Kagy Blvd.  
Bozeman, MT 59717  
http://www.ips-planetarium.org/

**The Image Society**

A non-profit, technical, professional association for the advancement of visual simulation, related VR technologies, and their applications.

The Image Society, Inc.  
PO Box 6221  
Chandler, AZ 85246-6221  
E-mail Image@asu.edu  
Web: www.public.asu.edu/~image
WEB LINKS

Advanced Visualization Lab, Indiana University  
http://www.avl.iu.edu/

American Widescreen Museum  
http://www.widescreenmuseum.com/widescreen/intro.htm

Cybersphere Spherical Projection System  
http://www.ndirect.co.uk/~vr-systems/sphere1.htm

Fulldome Video Discussion Group moderated by Ryan Wyatt  
http://groups.yahoo.com/group/fulldome

GRASP Lab Omnidirectional Vision Home Page  
http://www.cis.upenn.edu/~kostas/omni.html

Immersive Image Acquisition  
http://www.panoscan.com

Immersive Image Processing  
http://www.fh-furtwangen.de/~dersch/  
http://www.realviz.com  
http://www.panoguide.com/  
http://www.iqtvra.org/

Immersive Projection Technology Workshop  
http://www.vrac.iastate.edu/ipt98/  
http://www.vrac.iastate.edu/ipt2000/  
http://vr.iao.fhg.de/ipt-egve/

Immersive Projection Displays  
http://www.isdale.com/jerry/VR/IPD_Links.html#Events

Iowa State U. Virtual Reality Applications Center (VRAC)  
http://www.vrac.iastate.edu/

National Center for Supercomputing Applications (NCSA)  
http://www.ncsa.uiuc.edu/

National Tele-immersion Initiative - NTII  
http://www.advanced.org/tele-immersion/introduction.html

UNC sites with numerous technical papers on edge-blending and projector-based graphics  
http://www.cs.unc.edu/Research/stc/publications.htm  
http://www.cs.unc.edu/~raskar/Projector/

Princeton University Immersive Interactive System  
http://www.cs.princeton.edu/omnimedia
Ryan Wyatt’s discussion of fulldome standards
http://research.amnh.org/users/wyatt/

Spherical Rendering References, Tools, and Techniques
http://www.cs.unc.edu/~zimmons/cs238/maps/environment.html
http://www.planisphere.com/
http://www.cebasa.com
http://www.mentalimages.com
http://www.povray.org/
http://www.debevec.org/Research_HDR/
http://www.3dluvr.com/subagio/dome2light/HDRdome.html
http://www.iqtvra.org/DeFish/fisheye.html

University of Illinois - Chicago (UIC) EVL - Electronic Visualization Laboratory
http://www.evl.uic.edu/EVL

University of New Mexico – Arts and Technology Center student programs in production for
digital dome theaters
http://www.unm.edu/~atcinfo/menu/menu.htm

VR News – Virtual reality information source
http://www.vrnews.com/
MANUFACTURERS

3D perception a.s
Solbråveien 41
P.O.Box 455
N-1373 Asker
Norway
Tel: + 47 66 98 70 70
Fax: + 47 66 98 70 71
info@3d-perception.com
http://www.3d-perception.com
Manufactures DLP projector and software for dome and edge-blended projection.

Barco Simulation Products
600 Bellbrook Avenue
Xenia, Ohio 45385 USA
Tel: (937) 372-7579
Fax: (937) 372-8645
sales.bps.bsp@barco.com
http://www.barco.com/projection_systems/simulation/

Elumens Corporation
1100 Crescent Green, Suite 211
Cary, NC 27511 USA
toll free- 800-842-1687
Tel: 919-816-8787
Fax: 919-816-8788
info@elumens.com
http://www.elumens.com
Manufacturer of VisionDome® immersive displays and VisionStation® hemispheric monitor.

Evans & Sutherland
600 Komas Drive
Salt Lake City, UT 84108
Tel: (801) 588-7405
http://www.es.com
Digital Theater products include StarRider for domed theatres and PC-based image generators.

Fakespace Inc.
241 Polaris Ave.
MountainView, CA 94043 USA
Tel: (650) 688-1940
Fax: (650) 688-1949
http://www.fakespace.com
IPD products include the CAVE, Immersive WorkRooms, WorkWall, Workbench, Mini-Workbench, VersaBench, ImmersaDesk
Flogiston  
16921 Crystal Cave Drive,  
Austin, TX 78737 USA  
Tel: 512 894 0562  
http://www.flogiston.com  
Flodome and Flostation provide single user rear projected dome immersive displays.

Goto Optical Manufacturing Co.  
4-16 Yazaki-cho, Fuchu City,  
Tokyo 183-8530, Japan  
Tel: 81-423-62-5311  
http://www.goto.co.jp/product/virtuarium-e.html  
http://www.goto.co.jp/index-e.html  
Manufacturers the Virtuarium, a full color real time fulldome projector system for realtime computer generated imagery.

Immersion Studios  
Exhibition Place, Music Building  
285 Manitoba Drive, Toronto, Ontario  
Canada M6K 3C3  
Phone: (416) 260-7711  
Fax: (416) 260-7495  
http://www.imm-studios.com  
Immersion reality theatres – complete digital interactive cinemas.

Immersive Media Company  
2112 SE Clinton St.  
Portland, OR 97202 USA  
Tel: 503.231.2656  
Fax: 503.231.2655  
E-mail: admin@immersivemedia.com  
http://www.immersivemedia.com/menu.html  
Manufactures 11-head dodecahedral spherical video camera.

MetaVR, Inc.  
37 Elm Street  
Brookline, MA 02445-6813 USA  
Tel: US 617-739-2667  
Fax: US 617-249-0151  
http://www.metavr.com  
Rack mounted PC-based image generators with hardware synchronization of multiple IGs.

MultiGen-Paradigm, Inc  
50 South Winchester Blvd., Suite 500  
San Jose, CA 95128 USA  
Tel: (408) 261-4100  
Fax: (408) 261-4103
Vega realtime authoring software with nonlinear distortion correction for curved-screen immersive displays including head tracking.

Panoram Technologies, Inc.
10951 Pendleton St.
Sun Valley, CA 91352 USA
Tel: +1 (818) 504-0714
Fax: +1 (818) 504-0636
http://www.panoramtech.com
Edge blending hardware, curved, flat and rear projected wall immersive displays.

SEOS Displays Ltd.
Edward Way, Burgess Hill,
West Sussex, RH15 9UE, U.K.
Tel: +44 (0) 1444 870 888
Fax: +44 (0) 1444 870 777
http://www.seos.com
Worlds leading supplier of visual display systems to simulation industry.

Silicon Graphics
1600 Amphitheatre Pkwy.
Mountain View, CA 94043
Tel: +1 (800) 800-SGI1 (7441)
http://www.sgi.com/features/2001/apr/planetariums/
Offers realtime image generators and planetarium solutions.

Sky-Skan, Inc.
51 Lake Street
Nashua, New Hampshire 03060 USA
Tel: +1 603 880 8500
Fax: +1 603 882 6522
USA Toll Free: 1-800-880-8500
office@skyskan.com
www.skyskan.com
Manufacturers and integrators of dome video hardware, software and planetarium systems.

Spitz Inc
U.S. Route 1
Chadds Ford, PA 19317
Tel: +1 (610) 459-5200
Fax: +1 (610) 459-3830
http://www.spitzinc.com/
Turn-key immersive theatres, fulldome productions, and advanced dome screens.
Elumenati, LLC  
27 Maple Place  
Minneapolis, MN 55401  
Tel: +1 (612) 617-9721  
info@elumenati.com  
www.elumenati.com  
Immersive projection solutions.

Trimension Systems, LTD  
Whittle House, Marchants Way  
Burgess Hill, West Sussex  
RH15 8QY  
Tel: +44 (0) 1444 480130  
Fax: +44 (0) 1444 250777  
http://www.trimension-inc.com  
Numerous immersive projection and stereoscopic system products. SGI partner for Reality Centers.

Carl Zeiss Jena GmbH  
Planetarium Division  
Carl-Zeiss-Promenade 10  
07745 Jena  
Tel: (0049) 3641 642283  
Fax: (0049) 3641 643023  
planetarium@zeiss.de  
http://www.zeiss.de/de/planetarium/home_e.nsf/  
Manufacturer of planetarium instruments and dome video systems.