

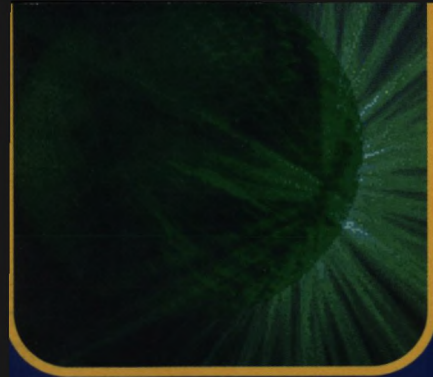
Proceedings

Graphics Interface 2000

15-17 May 2000

Montréal, Québec

Canadian Human-Computer
Communications Society



```
texture 1 {
  ambient 0.5 0.5 0.5
}

Double rfs, gfs, bfs;
p->getIntensity( i, rfs, gfs, bfs );

p->getTexture1TexCoords( i, u, v );
p->getTexture2TexCoords( i, r, w );

glColor3f( rfs, gfs, bfs );
glTexCoord4f( u, v, r, w );

else if( texCoordsTexture == DiffuseTexture ) {
  glTexCoord2f( p->getDiffuseTexture1( i ), p->get
  DiffuseTexture2( i ) );
}

#endif MULTITEX
else if( texCoordsTexture == MultiTextures ) {
  p->getTexture1TexCoords( i, s, t );
  glMultiTexCoord2fEXT( GL_TEXTURE0_EXT, s, t );
  p->getTexture2TexCoords( i, s, t );
  glMultiTexCoord2fEXT( GL_TEXTURE1_EXT, s, t );
}
#endif
```



```
// light has only "diffuse light"
glLightfv( GL_LIGHT0, GL_AMBIENT, light_ambient );
glLightfv( GL_LIGHT0, GL_DIFFUSE, light_diffuse );
glLightfv( GL_LIGHT0, GL_SPECULAR, light_specular );
glLightfv( GL_LIGHT0, GL_POSITION, light_position );

// Attenuation
// glEnable( GL_LIGHT_ATTENUATION );
glLightf( GL_LIGHT0, GL_CONSTANT_ATTENUATION, 1.0 );
glLightf( GL_LIGHT0, GL_LINEAR_ATTENUATION, 0.0 );
glLightf( GL_LIGHT0, GL_QUADRATIC_ATTENUATION, 0.0 );
```



Proceedings

Graphics **Interface** 2000

Sidney S. Fels and Pierre Poulin
Program Co-Chairs

www.graphicsinterface.org

Montréal, Québec
15-17 May 2000



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Message from the Program Co-Chairs

Sidney S. Fels
Department of ECE
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This year marked the return to Montréal of the Graphics Interface conference after 15 years of being held in different cities across Canada. Graphics Interface 2000 was held at the Palais des Congrès on May 15th to 17th in conjunction with four other conferences (Artificial Intelligence 2000, Vision Interface 2000, International Symposium on Robotics 2000, and the Annual PRECARN-IRIS Conference), as well as two trade shows (Robotics of Tomorrow and Montréal Machine Tool and Factory Automation).

We received 90 paper submissions on a wide range of topics related to computer graphics and human-computer interaction. From these, after considerable deliberation, the program committee selected the 27 papers that appear in these proceedings. With the very high overall quality of the submissions, the selection was very difficult. Each submission was reviewed by at least four experts, including two who sat on the program committee. The reviewing process was double-blind; no reviewer was informed of the authors or affiliations of any paper, even during the selection process at the program committee meeting. The program committee paper selection meeting was held in Toronto in January and was attended by 15 of the 19 committee members; each committee member paid their own expenses. Each committee member actively participated in discussing all submitted papers, except for those for which they had a conflict of interest, to try to ensure the fairness of the process. We greatly appreciate the enormous contribution the program committee made to keep GI an excellent, high quality conference.

We extend our gratitude to our three invited speakers: Henry Fuchs, University of North Carolina; Hiroshi Ishii, MIT Media Laboratory; and Demetri Terzopoulos, University of Toronto, who came to share their inspiration in their respective fields.

We wish to thank all the committee members for their strong involvement, all the reviewers for their critical analysis, James Stewart for developing all the necessary scripts for the electronic submission, reviewing, and final submission process, Michael McCool for the production of the printed proceedings, Wolfgang Stuerzlinger for taking care of everything involved in organizing the posters, Paul Johnston for bringing all these events together, Hélène Lamadeleine and Golden Planners Inc. for the organization of the joint conferences, Laurent Lefebvre for supporting the local web site, and Luc Leblanc for lending his personal computer to the project for several months. All of these people took time out of their busy schedules to make this event a memorable success, and we sincerely regret if any omissions have been made in these acknowledgements. The devotion of these volunteers to fellow researchers and to their fields demonstrates the importance granted to Graphics Interface. Finally, we wish to extend our appreciation to all the authors whose papers could not be included in these proceedings. The quality of your work often deserved the honour of appearing in these proceedings, and we regret that time and space constraints prevented us from accepting more of the submitted papers.

With its wide distribution throughout the world and the quality of the scientific contributions of its papers, we expect these proceedings to become an invaluable resource for computer graphics and human-computer interaction researchers and practitioners. We invite you to visit our website and strongly encourage you to contribute to future Graphics Interface conferences:

<http://www.graphicsinterface.org/>

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Graphics Interface 2001

University of Alberta
Edmonton, Alberta, Canada
16–18 May 2001

Call for Papers

GI 2001 will be a unique event presenting the latest results in computer graphics and human-computer interaction. It offers three days of invited speakers, posters, and refereed paper presentations. A banquet and electronic theatre will provide additional opportunities to meet speakers and other attendees for informal discussion in a social setting.

This year will be the 27th annual Graphics Interface. It is the oldest regularly scheduled computer graphics and human-computer interface conference in the world. Graphics Interface has established a reputation for a high-quality technical program and excellent invited speakers. Full details can be obtained through the Graphics Interface web site at www.graphicsinterface.org.

GI 2001 will be held at the University of Alberta, in Edmonton, Canada. Edmonton is a beautiful Canadian city located on the North Saskatchewan River. It is served by Air Canada, Canadian, Northwest and Horizon Airlines. As the location for the University of Alberta and the provincial capitol, Edmonton has a thriving intellectual and cultural life. Spring will be at its full force in May, and the beauty of the river park, with its hundreds of miles of paths, will be at its peak.

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Torsten Moeller, Simon Fraser University

Videos Chair

Dave Forsey, Radical Entertainment

Important Dates

Papers Due 19 November 2000
Decision for Papers 8 February 2001
Posters Due 26 March 2001
Videos Due 26 March 2001
Final Submission Due 2 April 2001
Decision for Posters 16 April 2001
Decision for Videos 16 April 2001

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For the latest information on the call for papers, the submission process, and the 2001 conference, visit the Graphics Interface web site at:

www.graphicsinterface.org

This conference is sponsored by the Canadian Human-Computer Communications Society.

Graphics Interface 2001

www.graphicsinterface.org

Submissions

Contributions are solicited describing unpublished research results and applications experience in all areas of computer graphics and human-computer interaction, specifically including the following:

Image synthesis & realism	User interfaces & modeling	Image-based rendering techniques
Shading & rendering algorithms	Windowing systems	Hardware techniques
Geometric modeling & meshing	Computer cartography	Computer supported cooperative work
Computer animation	Image processing	Interaction techniques
Medical graphics	Graphics for CAD/CAM	Graphics in education
Computer-aided building design	Graphics & the arts	Industrial & robotics applications
Visualization	Graphics in business	Graphics in simulation
Mobile computing	Haptic interfaces	Human interface devices

Papers, formatted as they would appear in the final proceedings, must be received by **19 November 2000**. Submissions will be entirely electronic in the form of PDF files; please visit the Graphics Interface web site for a detailed description of the submission process and format requirements. In exceptional cases, traditional hardcopy submissions will be accepted; first contact one of the conference co-chairs. Refereeing will be double blind. Only the title, without any indication of authorship or author location, should appear on the manuscript body. A separate file (sheet) should contain the manuscript title, abstract, and the full names, postal addresses, phone numbers, fax numbers, and email addresses for all authors. One author should be designated the contact author for subsequent correspondence regarding the paper. Accepted papers will be published in an archival-quality proceedings to be distributed by both ACM and Morgan-Kaufmann.

Notification of acceptance or rejection will be emailed to the contact author by **8 February 2001**. The final versions of accepted papers are due **2 April 2001**. Each paper will be allotted up to eight (8) pages in the proceedings free of charge. Extra charges will be made for pages exceeding the limit and for colour pages. All printing will be done on an offset press using a high-resolution imagesetter and CMYK process colour, directly from electronic files (PDF) submitted by the authors. Exceptionally good papers will be considered for publication in journals; arrangements exist for the best graphics papers to be considered by Computer Graphics Forum and for the best human-computer interface papers to be considered by Behaviour & Information Technology.

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```

if ( ! !> gl.glGenTextures( >numTextures ); ) {
    gl.glTexEnvf( GL_TEXTURE_ENV, GL_TEXTURE_ENV_MODE, GL_REPLACE );
    ppm = >getDefineTexture( );

    if ( ppm != NULL ) {
        if ( lookUpFront( ppm ) != lookUpBack( ) ) {
            // already stored as a texture object
            continue;
        }

        // find image

        lookUp( ppm ) = texname( nextName++ );
        glBindImage( ppm, 3, GL_REPEAT );

    } else {

        // ...

        if ( >getNumberOfTextures() == 1 ) {
            Image * front, * back;
            scene->getWorldTextures( 0, front, back );

            lookUpFront = texname( nextName++ );
            glBindImage( front, 4, GL_CLAMP );
            lookUpBack = texname( nextName++ );
            glBindImage( back, 4, GL_CLAMP );
        } else {

            glBindMap3D( front3D, back3D );
            scene->getWorldMap3D( front3D, back3D );

            if ( front3D && back3D ) {
                lookUpFront3D = texname( nextName++ );
                glBindImage3D( front3D );
                lookUpBack3D = texname( nextName++ );
                glBindImage3D( back3D );
            } else {
                cerr << "warning3d command missing in tcl-file!" <<< endl;
            }

        }

    }

}

glDisable( GL_TEXTURE_2D );

```



```

if ( comp == 3 ) {
    glTexImage2D( GL_TEXTURE_2D, 0, GL_RGB, image->getWidth(),
        image->getHeight(), 0, GL_RGB, GL_FLOAT,
        data );
} else if ( comp == 4 ) {
    glTexImage2D( GL_TEXTURE_2D, 0, GL_RGBA, image->getWidth(),
        image->getHeight(), 0, GL_RGBA, GL_FLOAT,
        data );
} else {
    cerr << "warning: 1 components == 3 components" <<< endl;
}

```

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