



41

```

field AD) vec3f points[1];
field SFBool begin_label 0;
field SFColor lin_color 0.0 0.0 0.0;
field SFVec3f x_scaling 0.10 0.10 0.10;
field SFVec3f y_scaling 0.10 0.10 0.10;
field SFVec3f z_scaling 0.10 0.10 0.10;

Group 1
  children [
    DEF bigT Transform {
      children [
        DEF largerT Transform {
          children [
            DEF Show Shape {
              appearance Appearance {
                material Material {
                  emissiveColor IS lin_color
                }
                geometry DEF itsShape [ ]
              }
            }
            coord Coordinate {
              coordinateSystem DEF itsCoord [ ]
            }
          ]
        }
      ]
    }
  ]

```



203

```

DEF richTransform {
  scale 0.05 0.05 0.05;
}

```

```

DEF mroScript Script {
  field SFNode fnC USE_aeC;
  field SFNode fnL USE_aeL;
  field SFNode rocks USE_aeRocks;
  field SFString posshape IS point_shape;
  field MFVec3f ps IS points;
  field SFVec3f x_ax IS x_scaling;
  field SFVec3f y_ax IS y_scaling;
  field SFVec3f z_ax IS z_scaling;
}

```

```

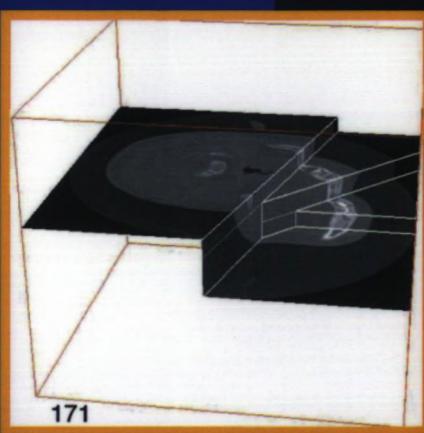
directOutput TRUE;
ul "javascrip";
function initialize () {
var dlen = ps.length;
var xfactor = 10/(x_ax[1]-x_ax[0]);
//var scaled_interval = xfactor / x_ax[2];
//print (scaled_interval);
//print (xfactor);
var yfactor = 10/(y_ax[1]-y_ax[0]);
//var scaled_interval = (1/y_ax[2]) * yfactor ;
// subtract y_ax[0] * yfactor
// print (scaled_interval);
//print (yfactor);
var zfactor = 10/(z_ax[1]-z_ax[0]);
// var scaled_interval = zfactor / z_ax[2];
// print (scaled_interval);
//print (zfactor);
}

```

```

var newpoints = new MFVec3f();
var str = new String();
//loop and compute the positioning for the data points in the graph
for (i=0; i< dlen; i++) {
  var item = ps[i];
  //var temp = new SFVec3f((item[0]*scaled_interval) , (item[1]* scaled_interval), -(item[2]*scaled_interval));
  var temp = new SFVec3f( ((item[0]*xfactor)-(x_ax[0] * xfactor)) , ((item[1]* yfactor)(y_ax[0] * yfactor)) , -(item[2]*zfactor)-(z_ax[0] * zfactor));
  //print (temp);
  newpoints[i] = temp;
  str = str + "Transform { translation "+temp+ " children "+psshape; str = str+" }";
}

```



171



49



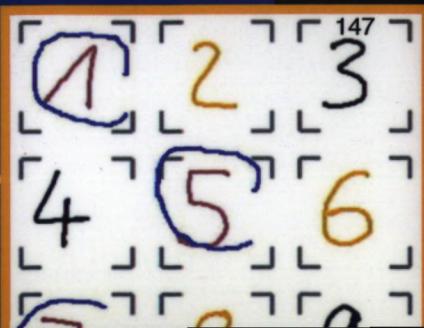
211



107



99



147

```

var ms = new MFNode();
//prim (str);
ms = Browser.createVrmlFromString(str);
nicks.children = ms;
//set Coord points
  linC_point = newpoints;
  var index = new MFInt32();

```

```

  IEEE
  vgtc

```

```

  for (i=0; i< dlen; i++) {
    index[i] = i;
    index[dlen] = -1;
  }

```



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Preface

Stephen Mann

CGL

David R. Cheriton School
of Computer Science
The University of Waterloo

Carl Gutwin

the interaction lab

Department of Computer Science
University of Saskatchewan

Welcome to Graphics Interface 2006. This annual conference, now in its 32nd year, is devoted to computer graphics, interactive systems, and human-computer interaction. Beginning in 1969 as the "Canadian Man-Computer Communications Seminar" (CMCCS), it is the oldest regularly-scheduled computer graphics and human-computer interaction conference. This year, Graphics Interface was held June 9–11, 2006 in Québec, Québec.

A total of 94 submissions were received, of which 31 papers were accepted. The final program is balanced between HCI and computer graphics, with both tracks seeing similar acceptance rates: 17/44 for the HCI track, and 14/50 for the graphics track.

The program committee consisted of 21 international experts, 18 of which attended the program committee meeting held in mid February at UBC. The great majority of papers received 5 reviews, two of which were from program committee members, and 3 from external reviewers. We thank the program committee for their expertise and time in selecting a very high quality set of papers for this year's conference. We also thank the many external reviewers for their help in this endeavor.

We would also like to extend our appreciation to this year's invited speakers, all of whom are outstanding leaders in their respective fields: Alyn Rockwood; and Elizabeth Mynatt, Georgia Institute of Technology. Their presentations provide unique insights that will help spark ideas to advance the fields of computer graphics and human-computer interaction during the coming years.

Lastly, we wish to thank several people whose efforts were indispensable in making Graphics Interface 2006 happen: Kellog Booth, James Stewart, Torsten Möller, Arthur Kirkpatrick, Barry Po, David Sprague and Juliet O'Keefe.

For further information about the conference series we invite you to visit the web site:<http://www.graphicsinterface.org/>

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Alain Fournier Award

For the Best Canadian Computer Graphics Dissertation

INAUGURAL RECIPIENT 2006

Michael P. Neff

On August 14th, 2000, Dr. Alain Fournier passed away. He was a leading international figure in Computer Graphics, and a strong and frequent contributor to the Graphics Interface conference. His insights, enthusiasm, wisdom, vast knowledge, humour, and genuine friendship touched everyone he met.

The Alain Fournier Memorial Fund was created to celebrate his life, to commemorate his accomplishments, and to honour his memory. It rewards an exceptional Computer Graphics Ph.D. thesis defended in a Canadian University over the past year. The winning thesis is selected through a juried process by a selection committee consisting of accomplished researchers in Computer Graphics.

This year, Michael P. Neff is the inaugural recipient of the Alain Fournier Ph.D. Thesis Award. His thesis, entitled "Aesthetic Exploration and Refinement: A Computational Framework for Expressive Character Animation", combines physics-based and kinematic animation tools that allow an animator to specify more easily expressive aspects of human motion. It spans the areas of graphics, biomechanics, robotics, and the performing arts. It uniquely draws inspiration from the literature and practice of the performing arts to motivate "expressive" animation primitives for synthetic humans. Its historical overview on the lessons we should take from the Arts into Computer Animation makes the thesis worth reading on its own, even if we were to ignore its substantial technical achievements.

Michael completed his B.Eng. at McMaster University, and his M.Sc. and Ph.D. in the Department of Computer Science at the University of Toronto, under the supervision of Eugene Fiume. Currently, Michael is doing a postdoc with Hans-Peter Seidel at the Max-Planck-Institute for Computer Science in Germany, and he will be taking up a faculty position at the University of California, Davis, later this year.

For more information about the Alain Fournier Memorial Fund, and information about donation, please visit <http://www.cs.ubc.ca/~fournier>

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```

field SFVec3f begin_label[0]
field SFColor line_color[0 0 0]
field SFVec3f x_scaling[0 10 1]
    field SFVec3f y_scaling[0 10 1]
    field SFVec3f z_scaling[0 10 1]

Group {
    children [
        DEF bigL Transform {
            children [
                DEF littleT Transform {
                    children [
                        DEF ShinyShape {
                            appearance Appearance {
                                material Material {
                                    emissiveColor IS line_color
                                }
                                geometry DEF ILS IndexedFaceSet {
                                    coord DEF psC Coordinate {
                                        points []
                                    }
                                    coordIndex []
                                }
                            }
                        }
                    ]
                }
                DEF ticks Transform {
                    #scale .3 .3 .3
                }
            ]
        }
    ]
}

DEF scribbleScript {
    field SFNode lineC USE
    field SFNode line USE
    field SFNode ticks USE
    field SFString polyline IS polyline_shape
    field MFVec3f pts IS points
    field SFVec3f x_ax IS x_scaling
    field SFVec3f y_ax IS y_scaling
    field SFVec3f z_ax IS z_scaling

    directionOutput TRUE
    url "transcript"
    function initialize() {
        var dlen = pts.length;
        var sfactor = 10/(x_ax[1]-x_ax[0]);
        //var scaled_interval = sfactor*(x_ax[1]-x_ax[0]);
        //prime(scaled_interval);
        //prime(factor);
        var sfactor = 10/(y_ax[1]-y_ax[0]);
        //var scaled_interval = (1/y_ax[1])*sfactor;
        //subtract y_ax[0] * factor;
        //points(scaled_interval);
        prime(sfactor);
        var sfactor = 10/(z_ax[1]-z_ax[0]);
        //var scaled_interval = factor*(z_ax[1]-z_ax[0]);
        //prime(scaled_interval);
        prime(sfactor);

        var newpoints = new MFVec3f();
        var s0 = new String();
        //loop and compute the positioning for the data points in the graph
        for (t=0; t< dlen; t++) {
            var item = pts[t];
            //var temp = new SFVec3f((item[0]*sfactor)-(x_ax[0]*sfactor), (item[1]*sfactor)-(y_ax[0]*sfactor), (item[2]*sfactor)-(z_ax[0]*sfactor));
            var temp = new SFVec3f((item[0]*sfactor)-(x_ax[0]*sfactor), (item[1]*sfactor)-(y_ax[0]*sfactor), (item[2]*sfactor)-(z_ax[0]*sfactor));
            prime(s0);
            newpoints[t] = temp;
            s0 = s0 + "Transform { translation "+temp+" children [ polyshape string "+item+"] }";
        }
    }
}

```



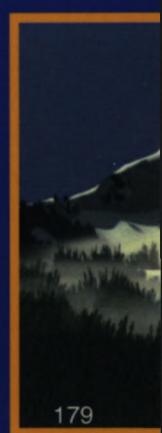
33



187



57



179

```

// add site to Browser
var nx = new MFNode();
//print(nx);
nx = Browser.createVnodeFromString(nx);
node.appendChild(nx);
//set Coord points
list_point = newpoints;
var index = new MFInt32();
// connect the dots in coordIndex
index[0] = 0;
index[1] = 1;
//print(index);
var coordIndex = index;

```



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