map3d History and Concepts

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map3d History

1990: First SGI, first GL, first map3d
1992/3: First papers:
  • Visualization in Biomedical Computing 1992
  • IEEE Visualization Conference 1992
  • Visualizing Bioelectric Fields (Comp. Graphics and Appl.m 1993
  • IEEE EMBS Conference, 1993

1999: Started conversion to OpenGL
2000: First OpenGL release: Version 5.0
2003: March 2003, Version 5.4
Why *map3d*?

Mapping: the driving application
- Spatiotemporal signals
- Electrophysiology of the heart

Graphics hardware and GL
- Interactivity is essential
- GL is (was) simple

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Goals of *map3d*

Read
- Surface based geometries
- Multichannel time signals

Render
- Color coded maps of scalars
- Plots of time signals

Provide
- Interactive control
- Interrogation of data
- Presentation graphics output
What Does *map3d* Need?

**Geometry**
- Surface or pseudo-surface
- Connectivity and facets

**Data**
- Time signal for each point in geometry

**Computer**
- SGI, Windows, Linux
- Mac/OSX coming soon

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*map3d Features*

“Looking at my data has never been so much fun!”
Map3d Rendering

Nodes and mesh

Map3d Rendering

Nodes and mesh Lighted surface
Map3d Rendering

Nodes and mesh
Lighted surface
Data Gouraud

Map3d Rendering

Nodes and mesh
Lighted surface
Data Gouraud
Data B-shaded
Map3d Rendering

- Nodes and mesh
- Lighted surface
- Data Gouraud
- Data B-shaded
- Time signals

Map3d Rendering

- Nodes and mesh
- Lighted surface
- Data Gouraud
- Data B-shaded
- Time signals
- Landmarks
Current Features

GTK windowing environment
  • Good control of look and feel
  • New UI elements

File support
  • ASCII for geometry
  • MATLAB for geometry and data

Image/movie capture
Image underlay

Window layout
Rendering Counters

Size Picker
Size Picker (2)

Color Picker
Reloading Data/Geometry
Reloading Data/Geometry
Reloading Data/Geometry

Scaling Window
Scaling Window

Scaling Window
Scaling Window

Scaling Window
Visualizing Clinical Data

Reentrant VT data computing with the Endocardial Solutions Incorporated (St. Jude Medical) system and visualized in map3d.

Data courtesy Ed Ciaccio, Columbia University.

What Next?

Not much: stable application
  • You tell us!
OS updates
Big fixes
Incremental new features