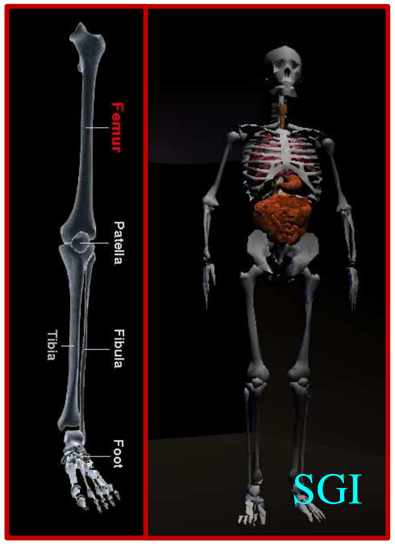
Future Directions in Computer Graphics

Thomas Funkhouser

Applications

Battle Simulation

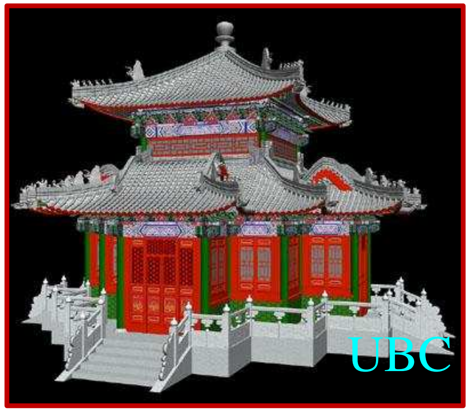


Medical Training

Computer–Aided Design

Entertainment

Sales & Marketing

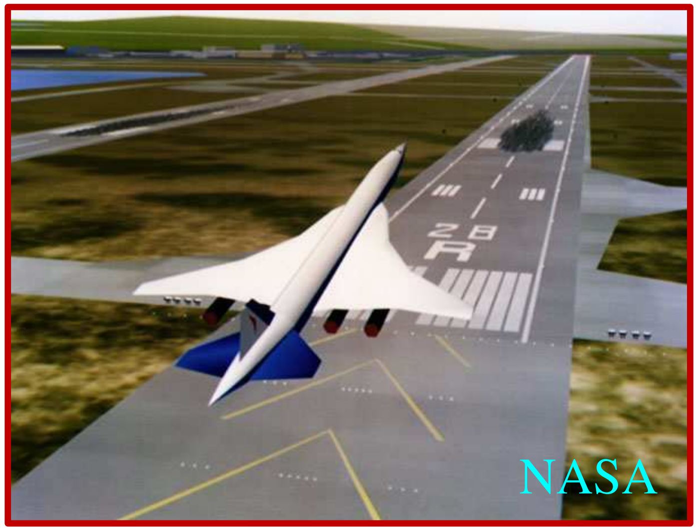


Education

Animation

Simulation and Training

Flight Simulation

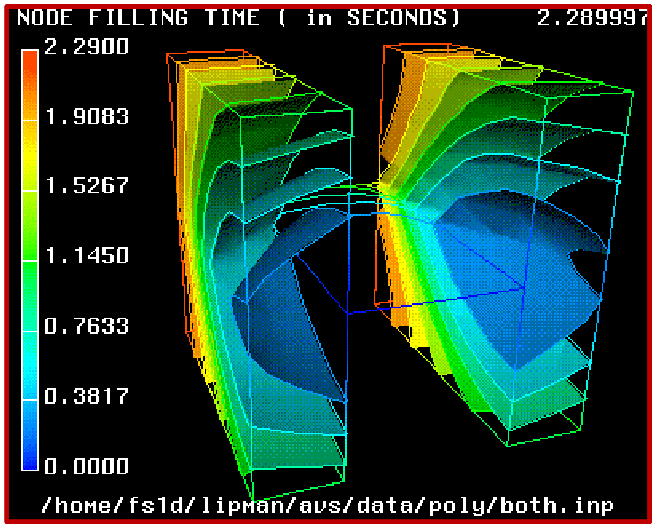


Flight Simulation

Battle Simulation

Nuclear Site Inspection Training

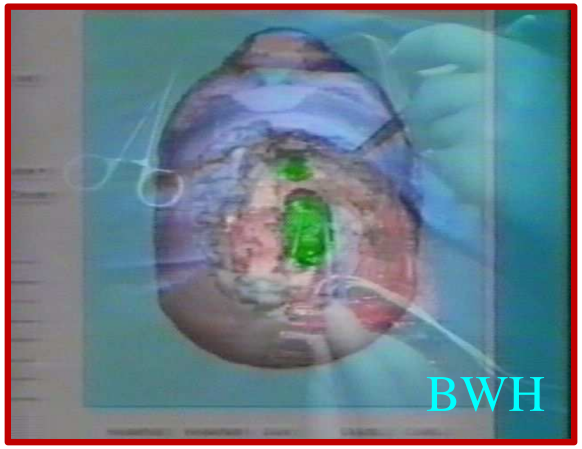
Data Visualization



Scientific Visualization

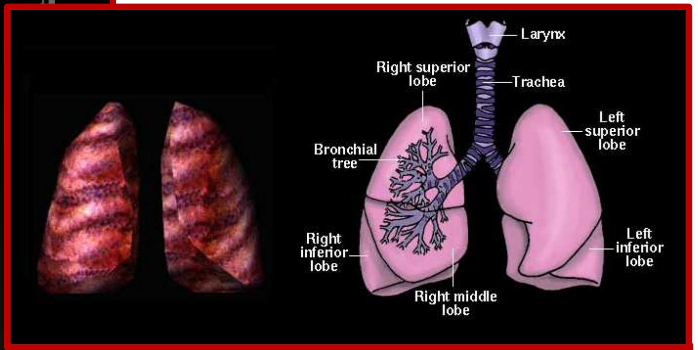
Financial Data Visualization

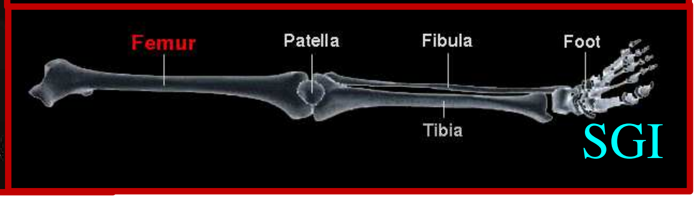
Medical Training and Surgery Planning



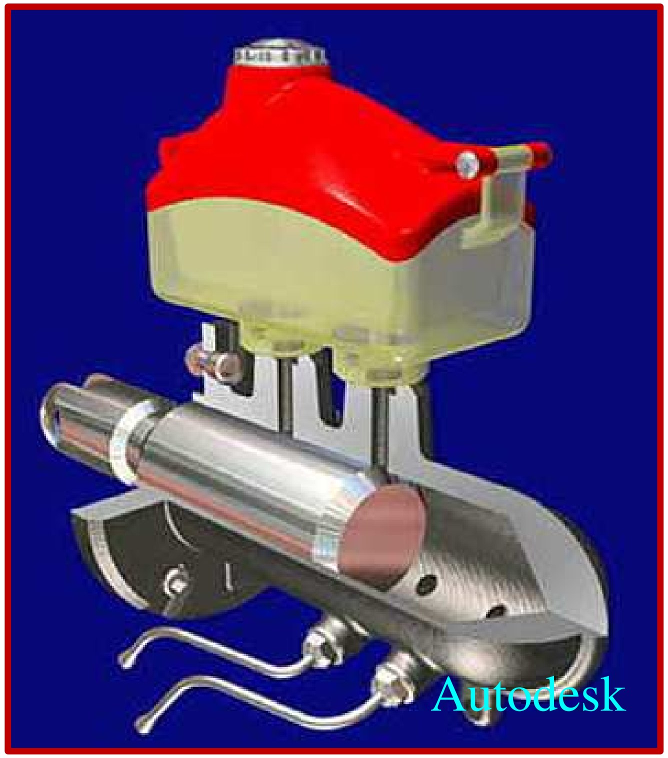
Neurosurgery

Anatomy Atlas





Computer–Aided Design



Piston Fueltank

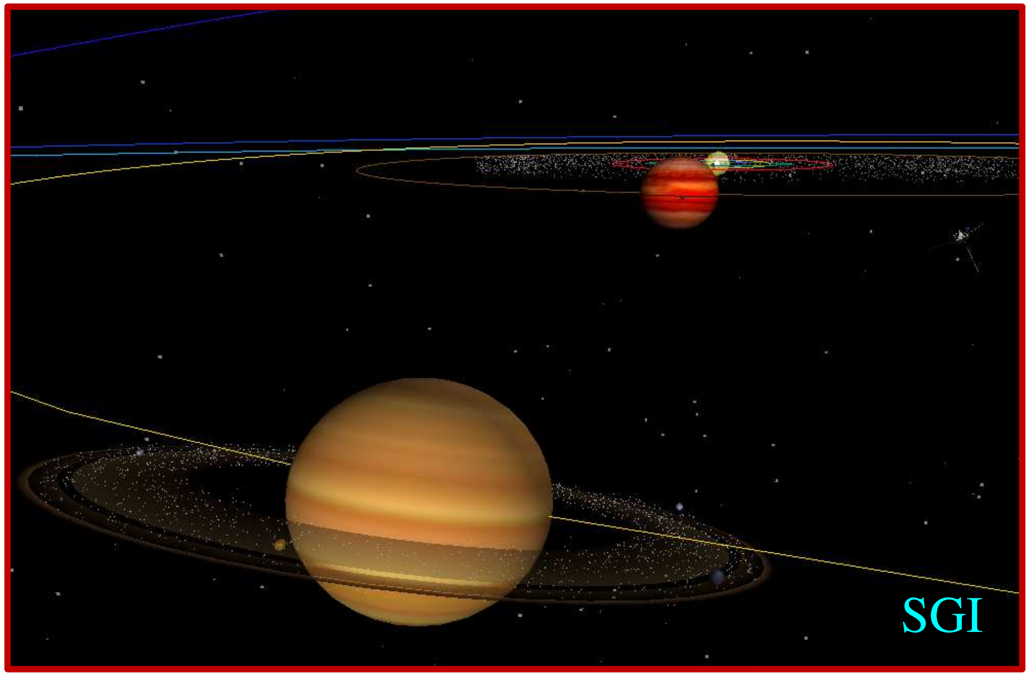
Boeing 777

Entertainment

Quake

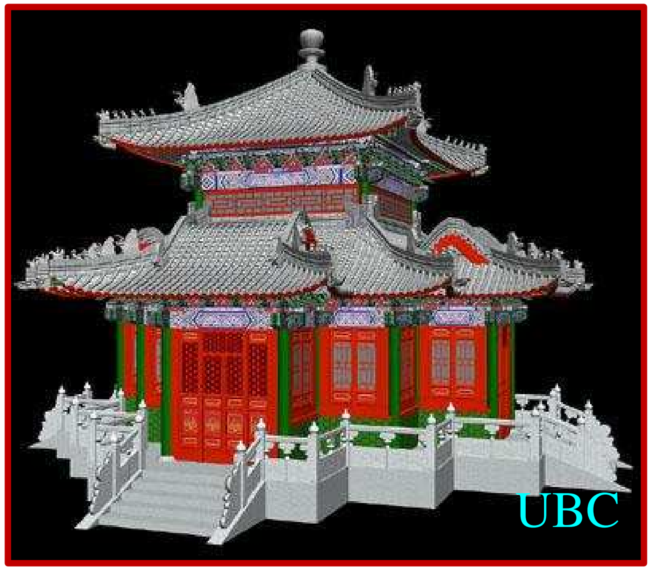
Aladdin

Education



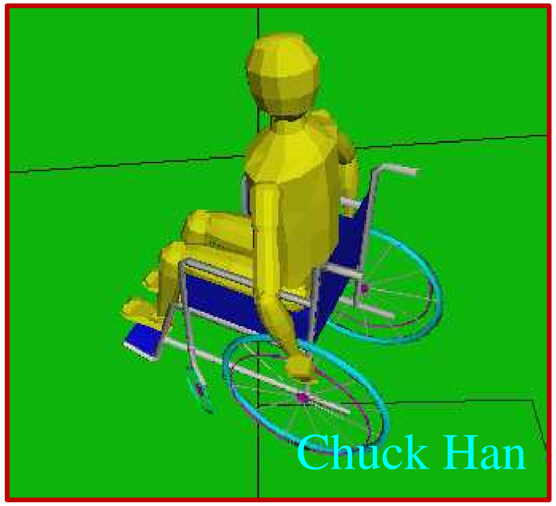
Visualization

Travel



Sales and Marketing

Sales Showroom



Product Demonstration

Marketing

Career Opportunites

Undergraduate students:

- Graduate school
- Startup company
- Corporate development

Graduate students:

- Academia
- Industrial research lab
- Startup company
- Corporate development

Graduate Schools

- **Stanford –** Hanrahan, Levoy, Guibas
- **Berkeley –** Sequin, Barsky, Forsythe
- **MIT –** Teller, Dorsey, McMillan
- **CMU –** Witkin, Baraff, Heckbert
- **Princeton –** Dobkin, Finkelstein, Funkhouser
- **Cal Tech –** Barr, Arvo, Shroeder
- **Cornell –** Greenberg, Shirley
- **Washington –** Salesin, Curless
- **UNC –** Brooks, Fuchs, Bishop, Manocha, etc.
- **Georgia Tech –** Rossignac, Hodgkins, Turk, etc.
- **Brown –** Van Dam, Hughes
- **UPenn –** Badler, Metaxas
- **Toronto –** Terzopolous, Fiume

Research Labs

- **Microsoft** – Kajiya, Cohen, Blynn, Smith, etc.
- **IBM** – Taubin, Rushmeier
- **Bell Labs** – Carlbom, Sweldens, Potmesil
- **GE** – Lorensen, Schroeder
- **MERL** – Foley
- **Intel** – Terzopolous
- **Xerox PARC** – Stone, Bier
- **INRIA** – Puesh, Sillion, Dretakis

Government Labs

- **NASA Ames –** VR
- **NIST –** Standards?
- **Army Research Lab –** Simulation & training

Hardware Vendors

- **SGI –** Hardware, software tools, applications, ...
- **SUN –** Hardware, software tools
- **IBM –** Hardware, software tools
- **DEC –** Hardware, software tools
- **HP –** Hardware, software tools
- **Intel –** Hardware

Display Hardware

- **3D Labs –** PC Boards
- **Evans & Sutherland –** PC Boards
- **nvidia –** Low–end Hardware

Interaction Devices

- **FakeSpace** – Boom, Workbench
- **???** – Head mounted displays
- **Pyramid** – Caves
- **Polhemus** – Trackers
- **SensAble Devices** – Phantom (haptics)
- **Aureal** – Convolvatron (sound)

Animation

- **Pixar –** Animation, software tools, ...
- **ILM –** Animation, software tools, ...
- **PDI –** Animation, software tools, ...
- **Rhythm & Hues –** Animation, software tools, ...

Entertainment

- **Disney** –Location–based entertainment, games, ...

CAD

- **Boeing –** Airplane design and visualization
- **Autodesk –** CAD tools
- **InterGraph –** CAD tools
- **Lightscape –** Radiosity
- **Virtus –** Low–end walkthroughs

Modeling Tools

- **SGI –** Alias/Wavefront, Cosmo Worlds
- **Cyberware –** 3D scanner

Visualization Tools

- **IBM –**

Software Tools

- **SGI –** OpenGL, VRML, Optimizer, etc.
- **HP –** DirectModel
- **Microsoft –** Direct3D
- **Template Graphics –** Device–independent toolkits

http://cg.cs.tu–berlin.de/~ki/engines.html