William Lorensen
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Bill Lorensen is a Graphics Engineer in the Visualization and Computer Vision Lab at GE Research in Niskayuna, NY. He has over 35 years of experience in computer graphics and software engineering. Bill is currently working on algorithms for medical image analysis and scientific visualization. He is a co-developer of the marching cubes and dividing cubes surface extraction algorithms, two popular isosurface extraction algorithms. His other interests include computer animation, color graphics systems for data presentation, and object-oriented software tools. Bill is the author or co-author of over 60 technical articles on topics ranging from finite element pre/postprocessing, 3D medical imaging, computer animation and object-oriented design. He is a co-author of "Object-Oriented Modeling and Design published by Prentice Hall, 1991. He is also co-author with Will Schroeder and Ken Martin of the book "The Visualization Toolkit: An Object-Oriented Approach to 3D Graphics" published by Kitware in 2004. He gives frequent tutorials at the annual SIGGRAPH and IEEE Visualization Conferences.
Bill holds thirty US Patents on medical and visualization algorithms. In 1991, he was named a Coolidge Fellow, the highest scientific honor at GE Research. In 2004, Bill received the first IEEE Visualization Career Award.
Prior to joining GE in 1978, he was a Mathematician at the US Army Benet Weapons Laboratory where he worked on computer graphics software for structural analysis. He has a BS in Mathematics and an MS in Computer Science from Rensselaer Polytechnic Institute.

Publications:

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Patents:

- US 6631322 – Method and apparatus for vehicle management
- US 6463168 - Apparatus and method for rapid connectivity processing of images
- US 6411919 - Method and apparatus for generating cable occupancy volumes
- US6298148 - Method of registering surfaces using curvature
- US 5900880 - 3-D surfaces generated from a list of cubic elements
- US 5821942 - Ray Tracing Through An Ordered Array
- US 5740802 - Computer graphic and live video system for enhancing visualization of body structures during surgery
- US 5682506 - Method And System For Group Visualization Of Virtual Objects
- US 5611025 - Virtual Internal Cavity Inspection System
- US 5542036 - Implicit Modeling Of Swept Volumes And Swept Surfaces

- US 5514962 - Oblique MR Image Controlled From A 3D Workstation Model
- US 5458126 - Cardiac Functional Analysis System Employing Gradient Image Segmentation
- US 5433199 - Cardiac Functional Analysis Method Using Gradient Image Segmentation
- US 5412563 - Gradient Image Segmentation Method
- US 5365927 - Magnetic Resonance Imaging System With Pointing Device
- US 5345490 - Method And Apparatus For Converting Computed Tomography (CT) Data Into Finite Element Models
- US 5204625 - Segmentation Of Stationary And Vascular Surfaces In Magnetic Resonance Imaging
- US 5187658 - System and Method for Segmenting Internal Structures Contained Within The Interior Region Of A Solid Object
- US 5166876 - System and Method for Detecting Internal Structures Contained Within The Interior Region Of A Solid Object
- US 5146557 - User Interface For A Golf Green And A Golf Putt Modelling System
- US 4984157 - System and Method for Displaying Oblique Planar Cross Sections Of A Solid Body Using Tri-Linear Interpolation To Determine Pixel Position Dataes
- US 4879668 - Method of Displaying Internal Surfaces of Three-Dimensional Medical Images
- US 4831528 - Apparatus and Method for Improvement Of 3d Images Derived From Tomographic Data
- US 4821213 - System for the Simultaneous Display of Two or More Internal Surfaces within A Solid Object
- US 4791567 - Three Dimensional Connectivity System Employing An Equivalence Schema For Determining Connected Substructures Within A Body
- US 4751643 - Method And Apparatus For Determining Connected Substructures Within A Body
- US 4729098 - System And Method Employing Nonlinear Interpolation For The Display Of Surface Structures Contained Within The Interior Region Of A Solid Body
- US 4719585 - Dividing Cubes System and Method for the Display Of Surface Structures Contained Within The Interior Region Of A Solid Body
- US 4710876 - System and Method for the Display of Surface Structures Contained Within The Interior Region Of A Solid Body
- US 4525858 - Method and Apparatus for Reconstruction of Three-Dimensional Surfaces from Interference Fringes