vIST/e

RRID:SCR_001627
Type: Tool

Proper Citation

vIST/e (RRID:SCR_001627)

Resource Information

URL: http://bmia.bmt.tue.nl/software/viste/

Description: A powerful, open source, platform-independent application for the visualization and analysis of complex, high-dimensional imaging data such as Diffusion Tensor Imaging (DTI) and High Angular Resolution Diffusion Imaging (HARDI). It has a plugin-based architecture which allows third parties to develop new plugins to extend the tool. Overview of the many features: * vIST/e is programmed in C++. It uses the Visualization Toolkit for visualization and pipelined data processing, as well as the cross-platform toolkit Qt Framework for an easy-to-use Graphical User Interface. * vIST/e introduces a powerful new plugin system, which allows for modular development with increased extensibility and stability. * Powerful GPU-based visualization techniques allow for smooth, real-time visualization of large data sets. Using custom ray tracing algorithms created with OpenGL, vIST/e can render DTI ellipsoids and HARDI spherical harmonics glyphs up to 4th order. The high frame rates offered by modern GPU technology allows for interactive exploration of this complex data. * Diffusion Tensor Imaging data can be visualized and interactively explored in a number of ways, including multiple cross-sections, volume rendering, and tensor glyphs. Derived scalar volumes, including various different anisotropy measures, can be computed and visualized. Data from other modalities, such as structural MRI, can be shown alongside the DTI data. * Various fiber tracking methods allow for fast and accurate reconstruction of fiber pathways. Interactively defined Regions of Interest (ROIs) can be used for seeding and filtering of fibers. Fibers are visualized either as lines, optionally using a powerful, GPU-based lighting engine, or as 3D structures such as tubes. * Scalar volumes, glyphs, and fibers can be colored using a wide array of coloring option. Customizable color loop-up tables allow for highly flexible visualization of scalar data. * Visualization and processing of various different HARDI formats is supported. HARDI data is interactively visualized using highly detailed glyphs rendered on the GPU. HARDI glyphs can be visualized in combination with DTI glyphs, for a better overview of complex diffusion data. * vIST/e includes support for NVIDIA's Compute Unified Device Architecture (CUDA), which enables highly parallel, GPU-
based data processing, allowing for significant speed-up of computationally expensive algorithms.

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Resource Type: Resource, source code, data processing software, image analysis software, software application, data visualization software, software resource, software toolkit, image processing software

Keywords: diffusion tensor imaging, high angular resolution diffusion imaging, visualization, cross-section, volume rendering, tensor glyph, mri, fiber tracking

Resource ID: SCR_001627

Parent Organization: Eindhoven University of Technology; North Brabant; Netherlands

Related resources: Diffusion MRI of Traumatic Brain Injury

Availability: Open source

Website Status: Last checked up

Alternate IDs: nlx_153923

Alternate URLs: http://www.nitrc.org/projects/viste

Abbreviations: vIST/e

Mentions Count: 4

Ratings and Alerts

No rating or validation information has been found for vIST/e.

No alerts have been found for vIST/e.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 4 mentions in open access literature.

Listed below are recent publications. The full list is available at dkNET.

