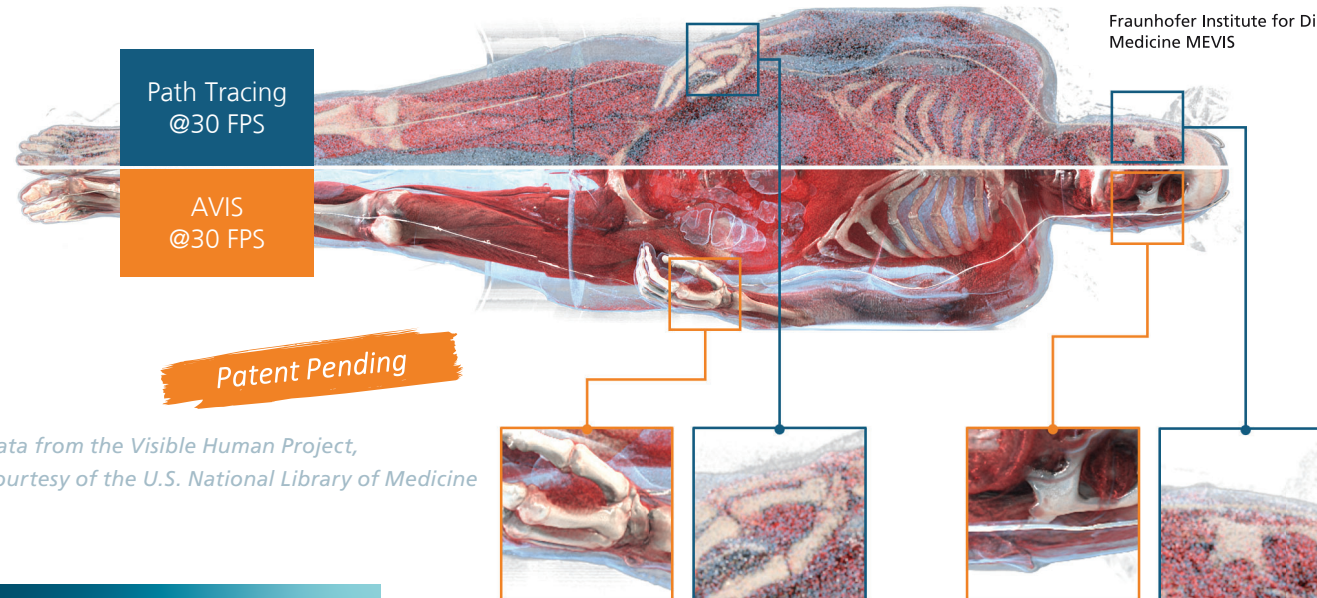


Our Offer

Our visualizations can be directly integrated into customer systems via a streaming interface, also working well for Unity or Unreal. In addition, we also offer the development of standalone desktop or web-based applications. Further customized solutions are possible and will be developed in close cooperation. The algorithms for segmentation are available as libraries (DLLs) for seamless integration into the target system.

As our institute has been working according to a certified quality management system in accordance with EN ISO 13485 since 2005, all deliveries to our partners can be made as medical device components with comprehensive documentation and support.

For a personal demonstration, technical or licensing questions, please contact our experts. We are here to provide customized solutions tailored to your needs.



Data from the Visible Human Project,
Courtesy of the U.S. National Library of Medicine

Contact

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More information on the web



High-Performance and
High-Quality 3D Visualization

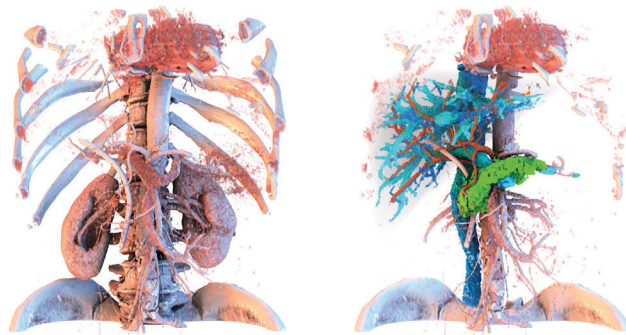
AI-enhanced Volume Rendering

Solution

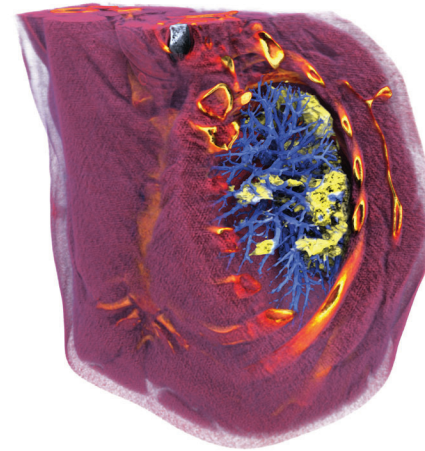
We offer various advanced direct volume rendering and surface rendering solutions for visualization of volumetric medical datasets. Our visualization solutions deliver exceptionally realistic and high-quality images with sophisticated lighting and shadowing enhancing the perception of spatial relations.

For realistic volume rendering with advanced lighting effects, we either employ physically plausible state-of-the-art Path Tracing or our novel AVIS rendering algorithm, which utilizes approximations to facilitate natural shadowing in real-time and without any noise – even during interaction and for AR, VR and XR scenarios.

Rendering is further enhanced by incorporating the results of our in-house AI-based segmentation techniques to automatically highlight relevant structures, such as tumors or vessels, further supporting the clinical workflow.



CT rendered with AVIS (left) and with AVIS and AI-based segmentations (right).



CT COVID dataset rendered with AVIS.

Benefits

Our visualizations improve spatial understanding of relevant structures and thus make clinical decisions faster without losing accuracy due to the advanced lighting and shadowing capabilities.

Our AI-based segmentation models identify and highlight relevant structures, further improving image interpretation. Our AI-based segmentations and visualizations can thus be helpful for numerous application areas, such as

- Intervention planning
- Intra-operative visualization
- Advanced visualization systems & PACS viewers
- Medical training & education as well as patient education

The underlying CT data for images on this page were provided courtesy of University Medicine Oldenburg, PIUS Hospital.

Key Features

Realistic Rendering

Physically based Path Tracing or noise-free AVIS rendering – we offer solutions tailored to your use cases.

Optimized for AR/VR/XR

Seamless integration into Augmented Reality and Virtual Reality environments without introducing additional image noise, ensuring clarity and precision.

High Performance

Outstanding results even on legacy graphics hardware, making it suitable for a wide range of clinical settings.

AI Integration

When combined with our AI-based segmentation models, our visualization algorithms can highlight critical structures and organs, facilitating informed decision-making for surgery and other therapies.



*Application for intervention planning in Augmented Reality.
Copyright: Fraunhofer MEVIS / PIUS Hospital Oldenburg*