

Enhancing Laser Ultrasound Systems for Cutting-Edge Anatomical Imaging



Improved
Anatomical Imaging



3D Visualization
Capabilities



Better Cancer
Detection Support



AI-Powered
Image Analysis



Image-Guided
Interventions

Client

The client is a leading innovator in Optoacoustic Tomography (OAT), specializing in advanced imaging, sensing, and monitoring technologies for biomedical applications.

Business Need/Challenges

The client offers laser ultrasound systems with the capability to image specific anatomical locations, typically used in functional, molecular, and anatomical analysis.

Focused on improving diagnostic precision and clinical imaging outcomes, the client develops laser ultrasound systems designed to visualize targeted anatomical areas and support functional, molecular, and anatomical analysis in healthcare environments.

Technical Specifications



The client had to be provided with a platform that would enable the visualization of three-dimensional images, scientific analysis of images, training of cloud-based image recognition models, export of artificial intelligence models, and reusing image volumes to enable continuous learning for accurate image labeling.

Solution

Innominds utilized IFusion, their data analytics platform, to improve the imaging capabilities of the client through the following:



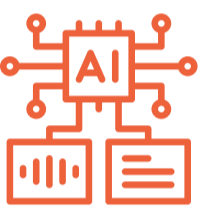
Utilizing 3D Slicer for scientific analysis of images beyond conventional imaging techniques



Training image recognition models in the cloud using deep neural networks for multiple applications



Exporting image recognition models as ONNX, OpenVINO, PMML, PyTorch, and TensorFlow/TFLite



Generating image recognition model weights and inference engines for matrix operations



Enabling exported Python outputs to be loaded into 3D Slicer for visualization, human review, and post-processing



Reusing newly created image volumes for further training to improve anatomical labeling accuracy over time

Business Outcomes

- ➔ Delivered a 360-degree view of anatomy
- ➔ Enabled high-definition 3D slices of targeted anatomical regions
- ➔ Added advanced capabilities for 3D annotation and analysis
- ➔ Enhanced the anatomical imaging features of the client's system
- ➔ Improved support for cancer detection and anatomical composition analysis

Tools and Technologies

- 3D Slicer
- IFusion
- Artificial Intelligence
- Deep Learning
- ONNX
- OpenVINO
- PMML
- PyTorch
- TensorFlow / TFLite



Drive better diagnostic precision and advanced medical imaging outcomes with AI-powered anatomical visualization.

Explore How AI Can Redefine Medical Imaging

Visit www.innominds.com or contact marketing@innominds.com

