

iTOMOGRAPHY[®]

From Theoretical Breakthroughs to Industry Adoption

PRACTICAL BREAKTHROUGH IMAGING SOLUTIONS FOR ALL INDUSTRIES

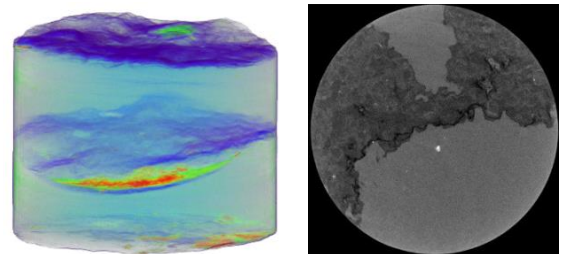
Computed Tomography (CT) imaging equipment widely utilized for medical and industrial applications often fails to produce image accuracy to its true potential due to application of suboptimal data processing and imaging algorithms and software. End-users of CT and microCT equipment for industrial applications have had no reliable means of improving quality and accuracy of imaging for their specific applications – until now.

iTomography's proprietary 3D imaging solutions are used by CT and microCT scanner OEMs and users of scanners to maximize quality, accuracy, and operational envelope of imaging to enable reliable and confident decision-making for their everyday needs.

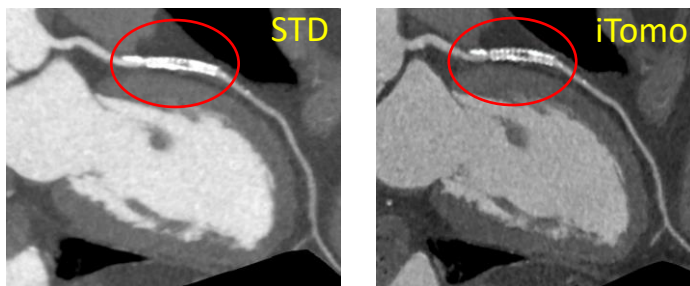
Unmatched Hands-On Experience and Industry Acceptance

iTomography's novel imaging solutions are utilized for the following and many other medical and industrial applications:

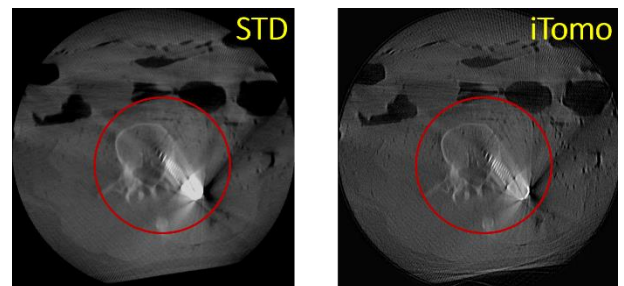
- Diagnostic
- Radiotherapy
- Guided Surgery
- Pre-Clinical
- Airport Security
- Materials Science
- Oil & Gas
- Forestry



iTomography's accurate 3D microCT imaging of shale rock for Oil & Gas exploration.



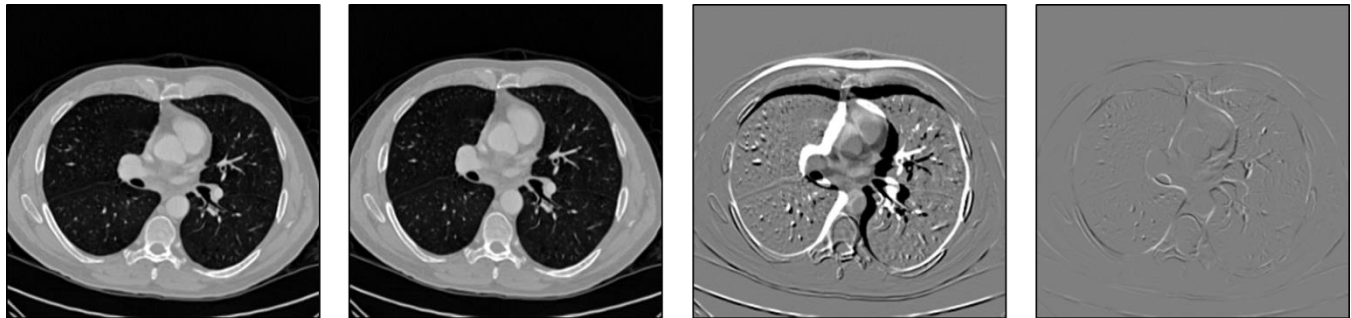
iTomography[®] reconstruction (right) shows significant improvement of cardiac stent imaging vs. manufacturer reconstruction (STD, left).



iTomography[®] reconstruction (right) shows less metal blooming vs. standard reconstruction (STD, left), to allow accurate placement of a screw in the vertebrae.

Machine Learning Solutions

iTomography[®] has hands-on experience with Machine Learning (ML). We can apply a wide range of ML tools, including neural networks (NN), to solve challenging problems in a variety of fields related to imaging and beyond. E.g., iTomography developed an algorithm based on convolutional NN to perform image registration.



Target Image (T)

Motion Image (M)

Difference: T - M

Result of Registration

Registration of CT Images. The registration algorithm estimates the deformation between two given patient images (two images on the left) and almost completely corrects for the motion. After correction for deformation, the two images become almost the same and the difference between them (right image) shows that small features and the lung boundary are well-registered.

In addition to medical applications, ML-based deformable image registration techniques allow one to enhance computer vision algorithms, enable image fusion obtained by different modalities, and improve other practical imaging solutions.

What We Do Best

iTomography's motto "**From Theoretical Breakthroughs to Industry Adoption**" derives from our track record of harnessing mathematical breakthroughs to develop practical solutions to complex problems posed by manufacturers and end-users.

Track Record of Solving Complex Imaging Challenges

- Novel image reconstruction algorithms and software for new scanners with unique geometries.
- Expanding operational envelope of existing CT scanners.
- Motion estimation & compensation for complex medical applications.
- Custom raw CT data processing, data correction, and image reconstruction workflows.
- Measurement and correction of X-ray scatter for microCT imaging.
- Algorithms and software to reduce image artifacts.

History

iTomography Corporation was founded in Houston, Texas in 2011 to develop innovative imaging technologies for medical and industrial applications.

Venture funding raised in Q3 2014 from Memorial Hermann Health System and the University of Central Florida. Company has been cash flow positive since Q1 2016 from customer-driven technology development projects.

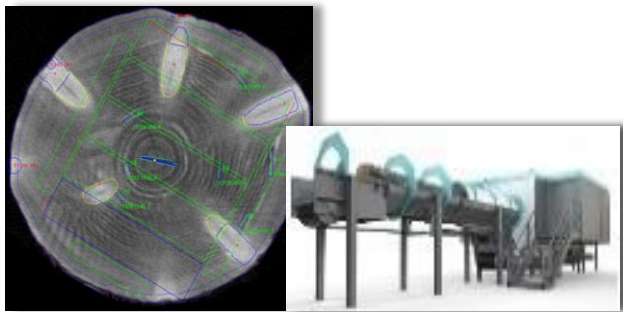
In 2018, iTomography is seeing strong demand for our arsenal of cutting edge solutions and services from customers in a wide spectrum of industries.



[Some iTomography Customers and Partners.](#)

Industry Recognition – 2016 Marcus Wallenberg Prize

Utilizing iTomography's proprietary 3D imaging technologies an Italian company Micotec was enabled to develop an industry-leading whole tree log CT scanner that runs at 180 meter/minute and produces high-quality images in real-time, keeping pace with modern sawing lines, while optimizing wood cutting and significantly reducing wood waste. For his work on this project, our CTO, Prof. Alexander Katsevich, won the prestigious Marcus Wallenberg Prize in 2016.



Ultrafast scanning and imaging of tree logs at 180 m/min keeping pace with sawing lines.



Prof. Katsevich, iTomography[®] CTO (left), being awarded the 2016 MWP by the King of Sweden (right).

This industry recognition is a strong example of how commercial collaboration between iTomography and OEMs can result in great technical achievements, which benefit not only entire industries but also society.

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