What's next

Healthcare

Infervision harnesses AI to identify and quantify lung nodules to aid in diagnosis and treatment

Infervision is a pioneer in applying medical AI and deep learning to assist medical image diagnosis, reinforcing AI's value to clinicians. Infervision's intelligent X-ray and CT-assisted diagnosis products have been deployed in hundreds of hospitals worldwide. Seamless integration into clinicians' daily workflow provides detailed analytical information for optimal decision-making and treatment to improve patient care. Infervision's InferRead Lung CT.AI model is now being integrated into PowerScribe reporting workflows via the Nuance AI Marketplace and PowerShare Network, connecting 7,500+ healthcare facilities in the US.

Jonathon Dreyer
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Accelerating AI adoption in radiology has been an uphill climb, but momentum continues to increase. Acceptance of these innovations as an integral part of the radiology reporting process grows exponentially as users experience real benefits in terms of time savings and report quality improvements. AI-driven solutions related to lung disease have had a particularly intense focus due to the COVID-19 pandemic and its impact on population health and healthcare delivery.

Matt Deng, Ph.D., Director of Infervision North America, shares his perspectives about the Infervision AI journey and the impact of their pioneering **InferRead Lung CT.AI** solution on the speed and accuracy of diagnostic imaging. He'll provide details about how it brings new insights and information to assist in lung disease diagnosis and treatment and address Infervision's other imaging AI initiatives.

InferVision
With A.I.,We Improve Human Life

Jonathon Dreyer: *Tell us about your business when and how you started and your development journey.*

MD: Infervision is a global high-tech enterprise focused on medical artificial intelligence. Since 2015, Infervision has been devoted to the clinical application of artificial intelligence and deep learning technologies in health care. We aim to use the most advanced deep learning technology to deliver value for patients, healthcare providers, and payers that facilitate high-quality medical service to billions of lives. Infervision's medical AI solutions and tools assist the physician with accurate disease diagnosis and detailed analytical information for optimal decision-making and treatment choices.

Infervision has robust AI solutions that are fully integrated with the healthcare workflow to help diagnose various diseases and conditions, such as cerebral hemorrhage, lung cancer, bone fractures, emphysema, and more. Infervision also provides a turn-key AI-powered research platform (InferScholar) for medical professionals to support their research initiatives.

JD: *What AI solutions do you have and what do they do?*

MD: Currently, our InferRead Lung CT.AI is commercially available in the U.S. InferRead Lung CT.AI utilizes state-of-the-art deep learning technologies to automatically identify lung nodules and perform detailed nodule quantifications accurately and efficiently.

This AI solution has been trained with hundreds of thousands of exams to ensure its accuracy and performance. Clinical and standalone study results have demonstrated that InferRead Lung CT.AI can significantly help radiologists improve actionable lung nodule detection rates.

Validated through retrospective, multi-reader multi-case (MRMC) studies, InferRead Lung CT.AI has been shown to help achieve up to 30% reduction in exam reading time and up to 35% reduction in missed actionable nodules. InferRead Lung CT.AI is currently in use at hundreds of hospitals and imaging centers globally. Over 20 million patients have already benefited from this advanced AI technology.

JD: *What s the big Aha moment when you first show users what your AI application(s) can do for them?*

MD: The market takes time to accept and get used to having AI as a helper. When users first worked with our AI model, they were unsure about this unfamiliar technology. However, they quickly started to appreciate the convenience and intelligence this AI model delivers. From the user feedback, radiologists have genuinely experienced how our AI can help them save time,

especially from highly repetitive work and diagnostic report generation. They've highly endorsed this technology for its double safety check to ensure any actionable nodules are being detected and adequately followed. Another "Aha" moment" is that new or less experienced radiologists have found that this well-trained AI helps them with more confidence in their image interpretation process and enables a diagnosis quality as good as an experienced doctor in the field.

JD: *What challenges or needs did you see that drove you to focus on this?*

MD: Consider the large picture. Unequal distribution of high-quality medical resources is a global issue for the healthcare industry. Different health parties have taken many measures to reduce this gap; however, there are still disparities. For example, in the US, many high-quality medical resources are gathered on the coast. Simultaneously, other and usually more rural regions may have a scarcity of top-quality medical resources, including radiologists. From the health provider's perspective, the radiologist's intense workload and work pressure can lead to fatigue and misdiagnosis, which sometimes may lead to severe impact on patients. However, with this highly intelligent AI solution, radiologists can spend less time scrutinizing the computer screens and allocate more time for patient care. With the assisted diagnosis AI tool, imaging diagnosis quality can be maintained with improved satisfaction from all parties in the care cycle.

JD: *What s the number one benefit you offer?*

MD: Increased confidence and an "ease of mind" during the imaging interpretation workflow, with increased radiologist work efficiency and diagnosis accuracy.

JD: *Are there any stories you can share about how your AI solutions drove measurable patient care outcomes?*

MD: In a retrospective test at an imaging center, Infervision's lung model found a nodule omitted in the radiology report generated by an experienced radiologist. Later, the hospital called the patient for follow-up, which was later confirmed to be a malignant tumor. Another case was in a local hospital, where Infervision's AI solution detected a missed ground-glass nodule measuring 7.9mm. The patient was immediately recalled for follow-up.

JD: *What benefits does Nuance, and its AI Marketplace for Diagnostic Imaging bring to your users? What problems does the marketplace and integration into Nuance s workflow solve?*

MD: Nuance's AI Marketplace for Diagnostic Imaging serves as a bridge to connect the users

and vendors in the market and facilitates the convenient and effective match between the AI model's supply and demand. With Nuance's platform, medical AI solutions for diagnostic imaging can scale faster and be effectively integrated within clinical workflow. The platform also provides the user with an excellent place to gain first-hand experiences and truly recognize the value and power of AI to help with their day-to-day work processes.

JD: *What has your experience been working with the Nuance team?*

MD: The Nuance team is highly professional and responsive. While working with the team, our questions are quickly answered, and any issues are efficiently solved. It is an excellent team with the capability to bring resources together and help everyone succeed.

JD: *What is your vision for how your solution(s) will evolve over the next five years?*

MD: Over the next five years, I expect the application of the InferRead Lung CT.AI tool to become the norm in the radiologist's workflow. Through ongoing feedback, our AI model would constantly self-iterate and be polished to remain the top-level performer.

JD: *In one sentence, tell us what you think the future of medicine will look like.*

MD: With the development of machine intelligence, the future of medicine comes with safeguarded, high-quality medical care, the alleviation of scarcity and uneven distribution of high-quality medical resources, and improved healthcare system utilization worldwide.

Learn more:

To learn more about Infervision, please visit www.infervision.com and follow us on LinkedIn or Twitter.

Tags: radiology

More Information

About Jonathon Dreyer

Jonathon Dreyer is the vice president of solutions marketing for Nuance where he is driving a physician-first approach to medicine by bringing cloud-based speech recognition and clinical language understanding technology to a worldwide community of healthcare IT developers and provider organizations. Prior to his current role, Jon worked as the solutions marketing manager for Diagnostic Imaging at Nuance and previously headed up marketing at Commissure Inc., a provider of clinical documentation and healthcare communication solutions. Jon graduated with Summa Cum Laude honors at Wayne State University where he earned a B.S business administration.

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