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ASIA EDITION

“Lunit is poised to evolve from an AI-based medical imaging company into a pioneering provider of AI healthcare platform”

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Lunit Inc, a pioneering player in South Korea's medical imaging industry, achieved significant milestones in 2023. The company secured the EU MDR mark and unveiled its cutting-edge 3D breast screening product, known as ‘Lunit INSIGHT DBT.’ Notably, Lunit's AI technology has been adopted by over 2,000 healthcare institutions worldwide, marking a major accomplishment. Lunit made noteworthy announcements, including their expansion into Saudi Arabia and Europe. Brandon Suh, the CEO of Lunit Inc., shares more about the company's mission to combat cancer and advance medical image analytics.

Can you provide a brief overview of Lunit's mission and its core focus in the field of medical AI?

Lunit is a medical AI company with a mission to conquer cancer. The company's core focus is on developing AI solutions for precision diagnostics and therapeutics. This includes AI-powered tools for cancer screening and diagnosis, and AI-powered biomarkers that can enable new therapeutic development and then accurately guide patients to specific cancer therapies. By ensuring timely diagnosis and effective treatment for each patient, Lunit aims to increase the chance of survival by detecting early-stage cancers and helps increase immunotherapy efficacy by accurately predicting treatment response.

Lunit has received recognition in international AI competitions, even surpassing tech giants. What do you believe sets Lunit apart from the competition?

Lunit boasts a robust team of AI experts and medical professionals, with around 40 per cent of our 280 employees dedicated to R&D, including AI researchers and developers. This ensures that our AI solutions remain at the forefront of innovation and reliability. Our deep learning algorithms have been trained on millions of high-quality data elements, enabling accurate detection and diagnosis of various medical conditions.

Lunit's research contributions have made a significant mark on the medical community. In radiology, our groundbreaking studies demonstrate that Lunit's AI solutions can outperform human detection in cancer detection with exceptional accuracy and efficiency. In digital pathology, our research has validated the predictive power of AI biomarkers both for biomarkers in use today, and for novel biomarkers enabled by computational pathology such as immune phenotyping, pioneering new pathways in the field of personalised medicine and drug development.

Lunit's findings have been published in renowned journals and presented at global conferences. Can you highlight some key research contributions and their impact on the medical community?

Recently published in The Lancet Digital Health, Lunit conducted a groundbreaking prospective study analysing 55,581 breast cancer screening cases in a real-world clinical setting. Our AI solution, Lunit INSIGHT MMG, collaborated with a single radiologist, achieving a remarkable Cancer Detection Rate (CDR) of 4.7 per 1000. This surpassed the traditional two-radiologist approach, which had a CDR of 4.5 per 1000. The study also demonstrated a significant reduction in recall rates (RR) with AI, both when collaborating with one radiologist (RR 2.8, 4.44 per cent decrease) and when operating independently (RR 1.55, 47.1 per cent decrease) compared to the double reading system (RR 2.93). These transformative findings led to Lunit replacing one human reader at Capio S:t Göran Hospital, Sweden's largest private hospital. This marks the first-ever actual implementation where AI replaces one of the two human readers in breast cancer screening.

At ASCO Breakthrough 2023: Lunit collaborated with Dr Takayuki Yoshino from the National Cancer Center Hospital East (NCCHE) to conduct a groundbreaking study. This study unveiled a significant breakthrough in understanding the relationship between the HER2 (Human Epidermal growth factor Receptor 2) detailed expression profile analysed by AI and the treatment response to Pertuzumab plus Trastuzumab in metastatic colorectal cancer (mCRC) patients. Lunit SCOPE HER2, our AI-powered solution, showcased its potential to predict treatment response, thereby advancing personalised medicine in mCRC patients.

At ASCO 2023, we presented an impressive total of 10 posters. This accomplishment is a monumental milestone for us as a medical AI company.

We also had the honour of presenting a groundbreaking study result at the Journal of Clinical Oncology (JCO). This study demonstrated the effectiveness of one of our AI biomarkers, Lunit SCOPE IO, for immune phenotyping from H&E to predict clinical outcomes of immunotherapy in patients with advanced non-small cell lung cancer (NSCLC). With an impact factor (IF) of 44.54, JCO is recognised for its excellence in the field. Importantly, this marked the first time that research on AI biomarkers had been published in an international SCI-grade journal of JCO's prestige.

Obtaining FDA clearance and the CE Mark is a significant milestone. How have these certifications facilitated the adoption of Lunit's technology in healthcare institutions?

Obtaining FDA clearance and the CE Mark is a significant milestone for Lunit as it signifies the safety and effectiveness of its AI solutions. These certifications have facilitated the adoption of Lunit's technology in healthcare institutions by providing assurance to regulators, healthcare providers, and patients about the quality and reliability of Lunit's products. They have enabled Lunit to expand its presence in both the US and European markets, opening up new opportunities for collaboration with healthcare organisations. As a result, Lunit’s AI software for chest X-rays and mammograms is now used in more than 2,000 healthcare sites across 40+ countries.

What are the long-term goals and aspirations for Lunit, especially in the context of its mission to conquer cancer and advance medical image analytics?

From our mission and ongoing projects, we aim to continue advancing medical image analytics and conquering cancer through AI. We are likely to continue expanding our presence globally, innovating our product offerings, and contributing valuable research to the medical community.

While specific details about upcoming services are currently under wraps, it's clear that Lunit is committed to enhancing its AI-powered medical imaging solutions. We aim to address a broader range of medical conditions and imaging modalities, with a particular focus on various cancer types.

But that's not all. Lunit is poised to evolve from an AI-based medical imaging company into a pioneering provider of AI healthcare platform. This shift is set to redefine the healthcare technology landscape and empower Lunit in unprecedented ways.

By seamlessly integrating and managing medical big data through the lens of AI, we are embarking on a mission to create a comprehensive platform that bridges gaps and revolutionises healthcare. Lunit will actively gather extensive cancer-related data from screening centres, regional hospitals, clinical trial institutes, and cancer centres spanning the globe. We are poised to analyse this wealth of data by employing advanced AI learning models, unraveling intricate patterns and insights that could redefine cancer diagnostics and treatments.

Our vision stretches even further into the future, envisioning an autonomous AI platform whose reading accuracy possibly reaches an impressive 100 per cent. This shows a future where autonomous AI becomes proficient in independently interpreting medical images—a transformative leap that holds tremendous promise for patients, healthcare providers, and the industry at large.

In essence, the future for Lunit is one of groundbreaking advancements, elevated standards of care, and transformative capabilities. We are on the precipice of a new age in medical technology, and our commitment to innovation, coupled with the potential of AI, will reshape how we diagnose, treat, and ultimately conquer cancer.

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