FUJITSU

Acer Medical Inc.

Spotting Early Health Risks Through AI-Powered Gait Analysis

Taiwan has become a super-aged society, with more than 20% of its population aged 65 and over. Maintaining the health of older adults is therefore a growing challenge, particularly the early detection of neurodegenerative diseases such as dementia and Parkinson's disease. To address this need, Acer Medical has developed an AI-based solution that analyzes gait patterns to assess potential disease risks, using Fujitsu's skeleton recognition technology, Fujitsu Human Motion Analytics (HMA). The service is scheduled to launch in Taiwan in 2026.

Challenges

- In an aging society, it is an urgent priority to suppress the progression of neurodegenerative diseases by promoting their early detection and intervention
- To suppress rising healthcare costs, it is essential to build streamlined diagnostic and clinical support systems

Solutions

- Use a standard camera to capture footage of an elderly person walking, analyze it with AI, and quantify the subtle changes in gait patterns
- Use AI to quantify gait changes that may reflect health status, supporting assessment and monitoring in care pathways related to dementia, Parkinson's disease, and cardiovascular conditions

Outcomes

- Abnormality detection is easier and more accessible to the public as gait footage can be captured without specialist equipment, or the patient wearing markers
- Healthcare professionals of all levels of experience can make swifter, objective judgments based on standardized and quantifiable information

"Doctors can diagnose neurological disorders by observing subtle changes in a patient's gait. HMA can serve as an 'extra pair of eyes' to support that clinical judgment."

Allen Lien, Chairman, Acer Medical Inc.

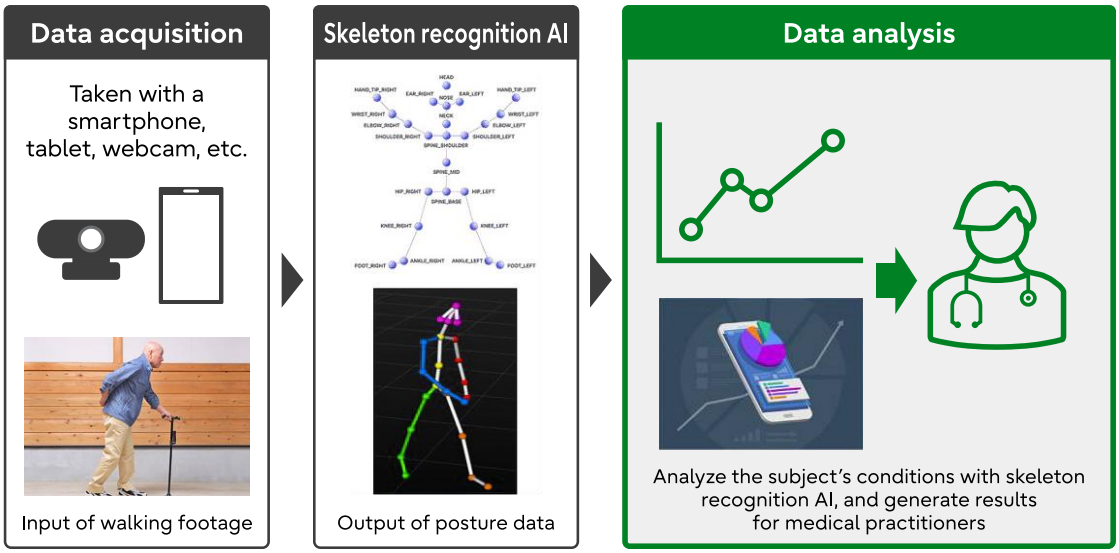
Taiwan in the super-aged era: Urgent challenges faced by medical frontline staff

According to a December 2025 report by Taiwan's Ministry of the Interior*1, the number of elderly people aged 65 and over in Taiwan has reached 4,657,796, exceeding 20% of the total population and marking the country's entry into a super-aged society. Maintaining the health of elderly people is a critical challenge. It is important to be able to manage common neurological conditions such as dementia and Parkinson's disease, through early detection and intervention. This is driven by the need to maintain individuals' quality of life (QOL), whilst ensuring care provided is as cost effective as possible to deliver the maximum benefit to an increasingly large volume of patients. Consequently, creating streamlined diagnostic and support systems in healthcare settings has become an urgent priority.

Acer Medical is focused on leveraging advanced technologies such as AI to address these challenges, and on enabling the early detection of diseases through simple methods that do not disrupt the lifestyles of elderly people. Allen Lien, Chairman of Acer Medical, explains the company's mission: "Acer Medical is the only subsidiary within the Acer Group that specializes in healthcare. Our vision is to bring technology to people by closing the gap between technology and healthcare, so we can apply AI to advance the field of medicine."

In partnership with Fujitsu, Acer Medical has recently developed "aiGait" powered by Uvance*2 (hereinafter referred to as "aiGait"). This solution utilizes AI to visualize gait motion without directly contacting the patient, and to measure the gait using standardized metrics. The technology quantifies gait features and changes in older adults' walking patterns, providing objective metrics to support clinical assessment and longitudinal follow-up.

And at the core of this solution is the skeleton recognition AI "Fujitsu Human Motion Analytics (HMA)" from "Fujitsu Kozuchi for Vision" , which is a key part of Fujitsu Uvance's AI Technology and Solutions portfolio.



*1 Source: Taiwan Ministry of the Interior Administrative Announcement https://www.moi.gov.tw/News_Content.aspx?n=9&sms=9009&s=334977
*2 Uvance integrates technology with all kinds of industry expertise to support cross-sector business growth while addressing societal challenges.

Enabling earlier detection of diseases, with skeleton recognition AI as a core technology

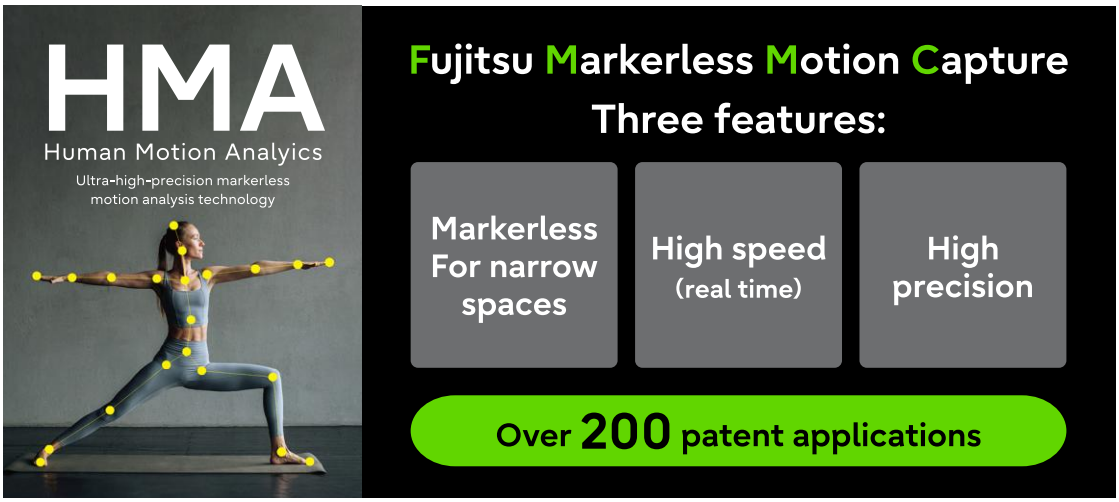
Traditionally, the Timed Up and Go (TUG) test is used to assess fall risk and functional mobility, and it is often used to track functional changes as neurodegenerative conditions progress. However, TUG frequently relies on visual assessment by clinicians, and results may vary with individual experience. In contrast, aiGait quantifies key components of gait and converts a patient's walking features and changes across follow-up visits into objective, comparable metrics—helping clinicians more sensitively capture trends over time for clinical assessment, care adjustments, and research analysis.

The core technology essential to this achievement was Fujitsu's HMA. HMA is a data analysis platform driven by computer vision, based on a high-precision posture recognition AI. This technology, built on the accumulated expertise in developing gymnastics scoring systems, is capable of precisely visualizing complex or high-speed human movements.

The key feature of HMA is that it can analyze motion using video footage captured by standard cameras such as those installed on smart devices, leveraging its advanced recognition capability. As HMA can digitize complicated human motion based on its footage, it accommodates situations where it is difficult to attach markers to the subject's body. Furthermore, with the use of a highly accurate AI model and a proprietary correction algorithm, precise analysis is achieved, minimizing the inconsistencies in posture recognition that were previously a challenge.

There were several reasons why Acer Medical chose Fujitsu HMA for its gait analysis solution, as Allen Lien explains. "Daily gait patterns contain a vast amount of health information. By observing them, we can identify post-stroke prognosis, frailty status, and fall risk. HMA's appeal lies in its ability to obtain medically valid data solely through gait observation, without requiring special tests like blood tests, to facilitate early detection of diseases. In addition, as this technology does not use markers, its ability to minimize psychological and physical burden on the subjects, and its flexibility for deployment in any location, are significant strengths as well."

Furthermore, quantifying information and enabling anyone to make the same judgment, regardless of the level of their experience or skill, is another major advantage. Allen Lien adds: "Doctors and nurses determine the location of neurological damage by observing subtle changes in a patient's gait. However, this requires extensive experience and advanced training, making it difficult for less experienced healthcare providers to make such judgments. By adopting HMA as a core technology, we can now precisely measure changes in movements and generate standardized numerical values. I believe this allows anyone, regardless of the level of their experience, to arrive at an objective judgment."



Company outline
Industry:
Healthcare

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New Taipei City, Taiwan

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About the customer

Acer Medical is a healthcare IT company within the Acer Group. It has developed AI-driven medical imaging diagnostic software and telemedicine platforms. Through innovative smart healthcare solutions, Acer Medical contributes to improving diagnostic accuracy, streamlining clinical settings, and achieving a healthier society.

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collaboration among patients' families and care teams improved dramatically

Proof-of-concept trials started in clinical settings with Fujitsu's support

Acer Medical conducted proof-of-concept (PoC) trials of aiGait powered by HMA at medical institutions in Taiwan ahead of its widespread implementation. Specifically, human movements such as standing up from a chair, sitting down, and walking were captured by a camera. Then the motion features were studied to find whether there were any commonalities with the movement characteristics of patients with diseases such as dementia. Allen Lien recalls: "During the process of widespread implementation in society, how to adapt to variables in the actual usage environment became a major obstacle. Unlike theoretical models, in clinical settings, factors such as lighting brightness, camera installation angle, the type of clothing worn by the patient, and the use of assistive devices such as canes or walkers can have a significant impact on the measurements."

To address these challenges, Fujitsu provided technical support to ensure reproducibility under diverse real-world clinical conditions. Flexible solutions, such as optimizing the HMA algorithm according to requirements, were provided to address physical constraints like camera angles and limited space. Allen Lien states: "Especially in rehabilitation settings, we have to be able to make quick adjustments and fine-tuning according to requirements, as the movements that require observation differ depending on the objective. Working closely together, Fujitsu supported us in making these adjustments."

From disease prevention to health promotion: Expanding systems that support healthier aging societies globally

The results of the PoC trials confirmed that a rapid, robust and repeatable deployment of this solution is possible, and that consistent follow-up can also be conducted based on objective data free from subjective bias. Feedback from doctors who participated in these trials includes: "As a result of achieving quantitative and qualitative measurements, collaboration among patients' families and care teams improved dramatically through the use of visualized reports," and "Significant progress has been made. Now we can determine presence or absence of symptoms at an earlier stage, and facilitate evidence-based optimal resource allocation and rehabilitation interventions."

Based on these results, Acer Medical plans to begin rolling-out aiGait across Taiwan starting in 2026. Furthermore, as the next step, the company is planning to expand the service beyond the medical and healthcare fields into gyms, sports centers, and even corporate wellness programs.

Allen Lien shares his vision: "We aim to reduce the overall societal burden of diseases at large by not only enabling early detection and prevention of them, but also by enabling healthier lifestyles and lowering the barriers to proactive self-care. Furthermore, we also wish to expand our collaboration with Fujitsu globally, following our work together in Taiwan and Japan. Looking ahead, we are planning to develop a library of acquired motion data and work towards building a new healthcare economic model that involves the insurance industry and local communities."

The true value generated by combining the technological capabilities of Acer Medical and Fujitsu is just beginning to emerge. Both companies will continue to pursue further innovation with the aim of solving the societal challenge of achieving a healthier aging society.