



神戸大学

AI-Based Wound Assessment Platform: Development of a Smartphone-Based Software as a Medical Device (SaMD) for Wound Evaluation

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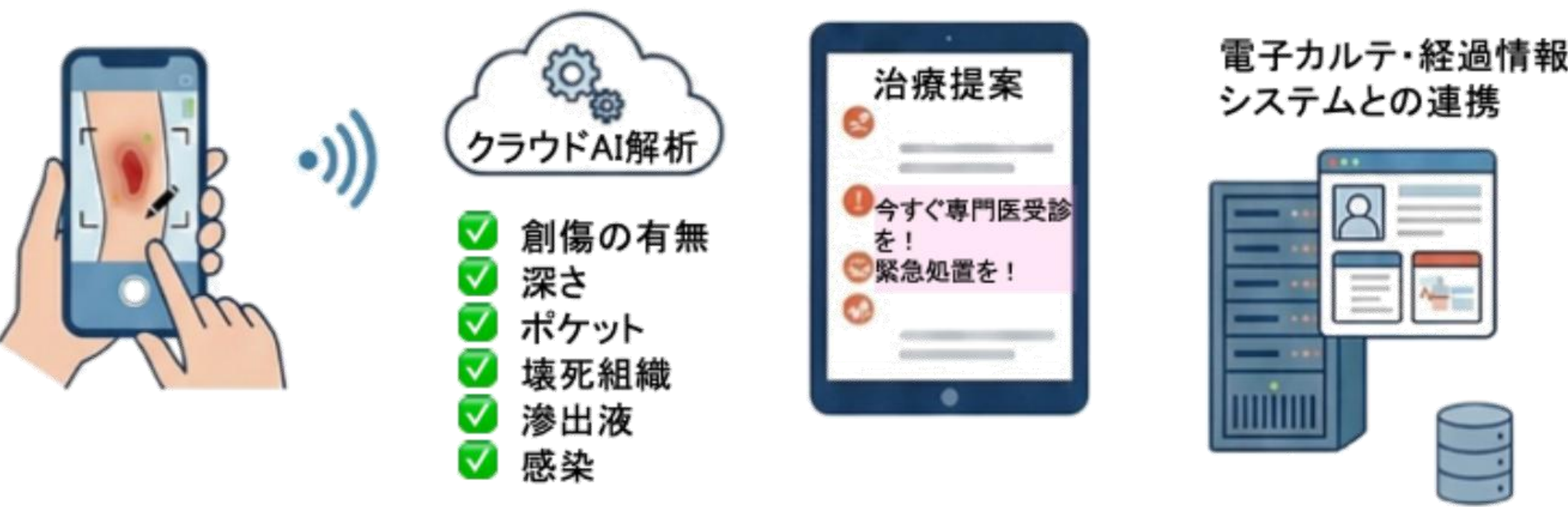
Background

The growing aging population has led to a rapid increase in chronic wounds, including diabetic foot ulcers, pressure injuries, and other hard-to-heal wounds. Wound assessment largely depends on clinical expertise, resulting in considerable inter-observer variability. Continuous wound monitoring also places a significant burden on healthcare professionals and healthcare systems.

Previously Technology

Most existing image-analysis technologies are limited to wound segmentation or area measurement. Comprehensive assessment of clinically important findings—including infection, necrotic tissue, granulation tissue, and wound exudate—remains challenging. Furthermore, many existing systems are designed for only a limited range of wound types, restricting their clinical applicability.

Technical Significance



We are currently developing and validating our AI algorithms. Through industry collaboration, we aim to optimize the user interface, conduct prospective clinical studies, obtain regulatory approval, and commercialize the technology as a SaMD.

- AI-powered wound image analysis
- Quantitative assessment and longitudinal monitoring
- Compatible with smartphone-acquired images
- Clinical decision support in settings with limited wound specialists
- Development toward regulatory approval as a Software as a Medical Device (SaMD)
- Future integration with electronic health records (EHR) and telemedicine platforms



現在、われわれが開発している創傷画像診断システムの動作

Future Prospective

Possible Applications

- Clinical wound assessment support
- Remote monitoring in home healthcare
- Pressure injury management in long-term care facilities
- Objective endpoints for clinical trials
- Integration into digital health and telemedicine platforms
- Global deployment of AI-driven wound management solutions

Possible Collaboration

- Artificial Intelligence & Medical Image Analysis
- Medical Devices & Digital Health
- Electronic Health Records (EHR) & Healthcare DX
- Telemedicine & Home Healthcare
- Advanced Wound Care Products
- Clinical Development, Regulatory Affairs, and Commercialization

Publications & IP

- Sakakibara S, et al. Construction and Validation of an Image Discrimination Algorithm to Discriminate Necrosis from Wounds in Pressure Ulcers. J Clin Med. 2023;12:2194.
- Sakakibara S, et al. The Future of Artificial Intelligence in Wound Management. Keisei Geka. 2023.
- Sakakibara S, et al. Clinical Photography in Wound Care. Japanese Journal of Pressure Ulcers. 2021.

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