



Principal Investigator

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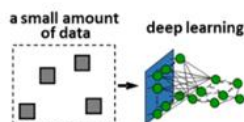
Adopted Theme

Development of comprehensive AI-aided diagnostic system for multiple diseases via our “Small-Data” artificial intelligence

Subject of Research

Development of comprehensive AI-aided diagnostic system for multiple diseases via our “Small-Data” artificial intelligence

Overview



Deep learning requires a large amount of data (10,000 to 100,000 cases), which is the biggest bottleneck in the medical field. We have successfully solved this bottleneck and developed a unique deep-learning model that can be trained with a very small amount of data (less than 100 cases). Using our small-data deep learning model, we will develop a diagnostic support AI system that covers many diseases, including rare diseases for which other research institutes have not yet started work due to the lack of a large number of cases, in a short period of time and at a low cost. The current medical AI systems are limited only to a single organ, single major disease. For example, the current AI can only detect a single major disease from an abdominal CT exam containing multiple organs; and thus, overlook the other diseases. The development of the integrated diagnosis support system will provide medical AI services that do not leave behind patients with various diseases including rare diseases around the world.

Business Models (when applying)

We will establish a startup company to develop and sell the integrated diagnostic support system in Japan and overseas, and provide it to radiologists, general physicians, and residents at a low cost.

We will develop the following sales models: (1) a stand-alone software sales model in which AI software is sold to hospitals, (2) a cloud-based, pay-per-use model in which a fee is charged for each case processed, and (3) a subscription model such as an annual contract.

MISSION: Our unique small-data AI provides all physicians with medical AI covering major and rare diseases at a low implementation cost by solving the large data need issue in the current AI development.

Activity Planning (when applying)

We aim to collect and annotate disease-specific medical images, develop disease-specific AI systems, build highly functional graphical user interface for reading images and create an integrated diagnostic support system through joint research with partner hospitals. At the same time, we will work with a business development agency to develop and finalize our strategy toward establishment of a startup company by the end of FY2026.

FY2024

Collection, annotation, and DB construction of disease-specific medical images
Discussions and development of the proposed business plan

FY2025 Development of AI for two diseases for commercialization with domestic hospital

→ Preparation for Japanese PMDA applications
Investigation of the specifications of the integrated AI Embodiment of the business plan

FY2026

Development of AI for the above two diseases for the U.S. market in partnership with U.S. hospitals
→ Preparation for U.S. FDA applications
Preparation for the establishment of a startup company