

OPTiM and Saga University to Launch Medical Innovation Lab Collaborative Research for Cutting-Edge Medical Care Using IoT and AI

TOKYO, Japan (December 22, 2016) - OPTiM Corporation (TSE: 3694), a market leader in Internet of Things (IoT) platforms, and Saga University have announced Medical Innovation Lab. This launch aims to utilize the latest technology, including IoT and Artificial Intelligence (AI) to develop efficient and effective medical treatments.



■About Medical Innovation Lab

Medical Innovation Lab operates under the concept of “Net for Life: a medical net to connect lives,” and has the following research objectives:

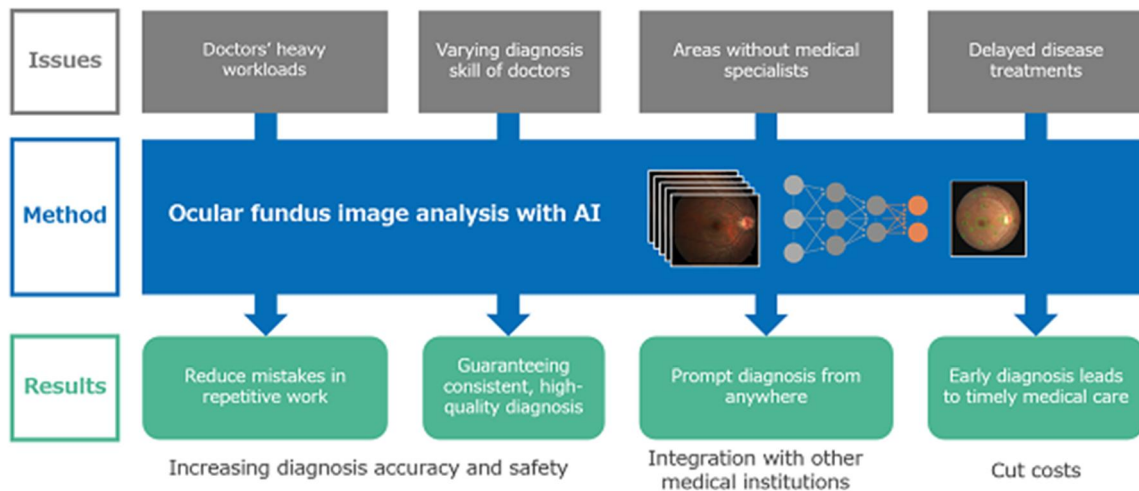
- Futuristic medical proposals
- Effective uses for medical resources and medical system optimization
- Introduction of practical IoT technology

Furthermore, there will be concrete efforts in the research of the following themes:

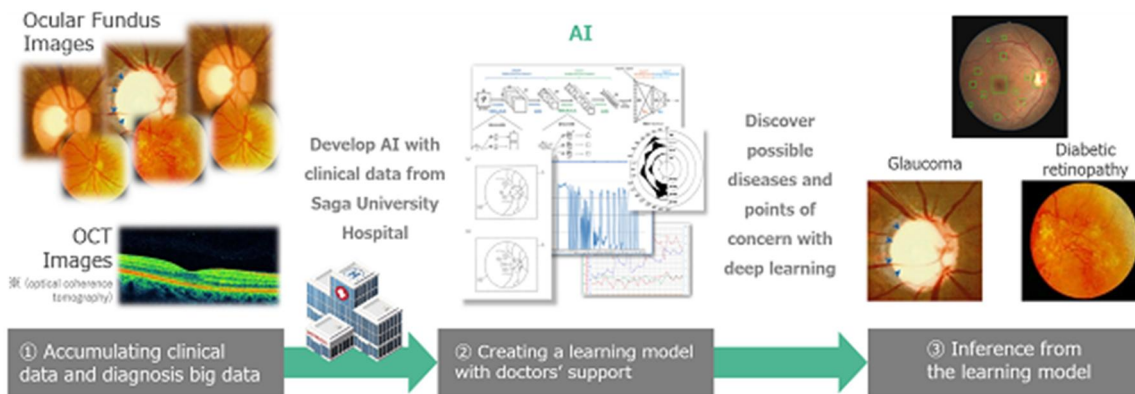
1. Diagnostic Imaging with AI support
2. Smart glass use in emergency vehicles

■1. AI-Supported Examination of the Ocular Fundus

An eye is unique in that it can have its blood vessel structure viewed with non-invasive procedures, so an ophthalmologist can diagnose a potential disease with just a medical examination. Early detection and treatment is key to preventing eyesight damage from disease, so periodic ophthalmologic examinations are critical. However, this concept cannot be implemented easily for various reasons, including doctors having numerous other duties and the quality of diagnosis relying on the skills of the doctor. Therefore, using AI to analyze images of a patient's eye could be an effective solution by easing doctors' workload, giving consistent results, providing quick diagnosis and creating data that is easily shared between relevant medical professionals.



The first project of the Medical Innovation Lab will be to use AI and deep learning in OPTiM's Cloud IoT OS to create support for detecting conditions affecting vision, including glaucoma, diabetic retinopathy and age-related macular degeneration. Development will be based on anonymous ocular images from Saga University's archives.

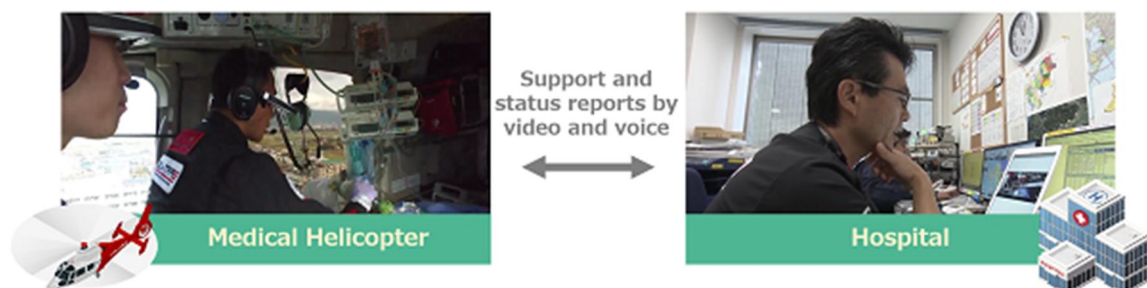


Example of Deep Learning for Medical Image Processing

In the future, the clinical big data accumulated by OPTiM Cloud IoT OS will be used to predict, diagnose and treat other diseases that can be detected in ocular fundus imaging. Such diseases include heart attacks, cerebrovascular disorders and Alzheimer's disease. Another aim of the Medical Innovation Lab is to create new methods of healthcare, for example, simple diagnosis by mobile device.

■2. Smart Glass Use on Emergency Vehicles

Quick and accurate assessment of a patient's condition is essential in an emergency, and a system needs to be in place for first responders in emergency vehicles. Saga University Hospital Critical Care Center's helicopter response system allows for staff to reach anywhere in Saga Prefecture within 15 minutes. However, communication from the emergency site to the hospital is limited to just voice calls which makes it difficult to accurately report a patient's condition. With OPTiM's remote operational work dedicated smart glass, Remote Action, emergency response workers can transmit real-time video of the patient to hospital staff, and the staff can give support through voice calls or on-screen. This way, the most suitable treatment can be quickly conveyed and performed, and the hospital can properly prepare for the patient's arrival.



OPTiM Cloud IoT OS will integrate the smart glass and other data collecting devices found on medical vehicles. With OPTiM Cloud IoT OS, video, sound recordings, vital signs, and location data can be recorded. Furthermore, research will be conducted to utilize this data properly for on-site process review, medical procedure support and training.



Smart glass and devices that collect vital signs work with OPTiM Cloud IoT OS



Video · voice call · vital signs · location information are mapped on-screen

■ About OPTiM Cloud IoT OS

OPTiM Cloud IoT OS is an intuitive and secure IoT solution. It allows users to manage and control connected devices, collect and store data on the cloud, and run analysis and AI to uncover insights. A powerful asset for businesses in any industry, Cloud IoT OS brings value to IoT systems and data.

For more information about OPTiM Cloud IoT OS, please visit the site below:

<https://en.optim.co.jp/cloud-iot-os/>

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