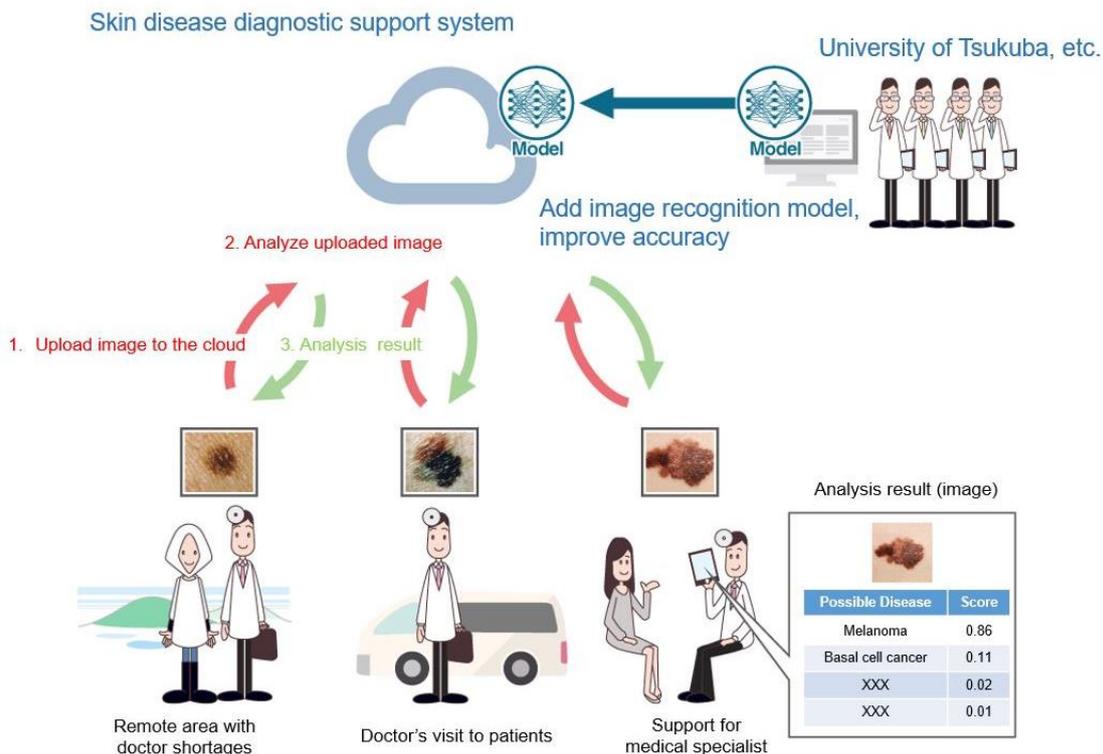


Press Information

KYOCERA Begins Research in AI-based Image Recognition to Help Diagnose Skin Diseases and Cancers via Smartphone

Collaboration with University of Tsukuba to develop AI-based image recognition for eHealth applications to diagnose skin diseases; project targets commercialization by 2020

Kyoto/London – November 3rd, 2017. Kyocera Corporation (President: Hideo Tanimoto) announced today that its subsidiary, Kyocera Communication Systems Co., Ltd. (hereafter “KCCS”), has started joint research with the University of Tsukuba to develop an Artificial Intelligence (AI) system capable of detecting melanoma and other skin diseases by analyzing digital images of a patient’s skin. The team aims to commercialize the technology by 2020.



Skin disease diagnostic support system and potential applications

Background

Recent developments in AI, image recognition, and IT infrastructure are facilitating great advances in the ability to analyze digital images. In the medical field, where digital imaging is already an essential diagnostic tool, AI-based image recognition offers revolutionary potential. Diagnosing skin diseases from digital images using AI will offer great advantages over conventional practices, which now often depend on the knowledge and experience of a physician.



In Japan, the number of skin cancer patients has approximately doubled*1 from 1999 through 2014. Japan's Ministry of Health, Labour and Welfare has identified AI as a key technology in the healthcare and medical sector. Because skin cancer treatment outcomes are substantially improved by early diagnosis, better diagnostic technologies are in great demand.

Overview of the Joint Research

KCCS is now working with Professor Manabu Fujimoto and Assistant Professor Yasuhiro Fujisawa (both of the Department of Dermatology, Faculty of Medicine, University of Tsukuba) to develop an image-recognition system accurate enough to distinguish several types of skin malignancies, including melanoma. The next phase of their project will aim for image-based diagnostic support of any skin disease. In addition to helping dermatology specialists, AI-based image recognition could allow accurate diagnoses in rural and remote areas lacking a local clinician, using pictures from smartphones or digital cameras to greatly improve healthcare outcomes.

The project benefits from a database of more than 20,000 clinical images accumulated over 20 years by the University of Tsukuba Hospital's Department of Dermatology. The University's experiences and knowledge including these images will be instrumental in assessing image-based diagnostic accuracy in real-world conditions. Additionally, KCCS will bring unique AI-based image-processing expertise accumulated through [Labellio](#) — a cloud-based web service. The service allows any user to create a simple "drag-and-drop" image classifier powered by deep learning.

Roles and Timetable

KCCS	Development of AI-based image recognition system
University of Tsukuba	Provision of clinical image database; Assessment of system accuracy and adaptability

KCCS and the University of Tsukuba will conduct joint research from March 2017 through March 2018, aiming toward a commercial application in the fiscal year ending March 2020. Furthermore, they plan to develop a system capable of identifying more than 2,000 different skin diseases from digital images by combining their respective resources and expertise in the future.

*1 Based on patient survey by Japan's Ministry of Health, Labour and Welfare.



For more information on KYOCERA: www.kyocera.co.uk

About KYOCERA

Headquartered in Kyoto, Japan, KYOCERA Corporation is one of the world's leading manufacturers of fine ceramic components for the technology industry. The strategically important divisions in the KYOCERA Group, which is comprised of 231 subsidiaries (as of March 31, 2017), are information and communications technologies, products which increase quality of life, and environmentally friendly products. The technology group is also one of the oldest producers of solar energy systems worldwide, with more than 40 years of experience in the industry.

The company is ranked #522 on Forbes magazine's 2017 "Global 2000" listing of the world's largest publicly traded companies. With a global workforce of over 70,000 employees, KYOCERA posted net sales of approximately €11.86 billion in fiscal year 2016/2017. The products marketed by the company in Europe include printers, digital copying systems, microelectronic components, and fine ceramic products. The KYOCERA Group has two independent companies in the United Kingdom: KYOCERA Fineceramics Ltd. and KYOCERA Document Solutions.

The company also takes an active interest in cultural affairs. The Kyoto Prize, a prominent international award, is presented each year by the Inamori Foundation — established by KYOCERA founder Dr. Kazuo Inamori — to individuals and groups worldwide who have contributed significantly to the scientific, cultural, and spiritual betterment of humankind (converted at approximately €400,000 per prize category).

Kyocera Communication Systems Co., Ltd. (KCCS) is a subsidiary of Kyocera Corporation and a provider of ICT, telecommunications engineering, environment and energy engineering and management consulting services. For more information, visit <http://www.kccs.co.jp/english/>.

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