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Taiwan introduces software for diagnosing diabetic retinopathy & macular edema

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To create Point-of-Care AI-DR, ITRI engaged 50 ophthalmologists who collected and labeled 150,000 fundus images as the training data for robust AI models



Taiwan-based Industrial Technology Research Institute (ITRI) has introduced Point-of-Care AI-DR, the first artificial intelligence (AI)-assisted system which can be integrated into handheld and desktop fundus cameras commonly used in hospitals and clinics to detect diabetic retinopathy (DR) and diabetic macular edema (DME).

Point-of-Care AI-DR diagnoses DR and DME in 5 to 10 seconds and instantly assesses image quality before diagnosis to prevent misinterpretation by the AI. It marks lesions and assesses the corresponding severity levels based on the fundus images.

Further, it can identify 14 other common ocular fundus abnormalities, including retinal related diseases, changes in blood vessels, and optic nerve related diseases.

According to the US National Eye Institute, more than half of people with diabetes will develop DR and about one in 15 will develop DME.

By identifying lesions and severity stages of DR and DME, Point-of-Care AI-DR improves diabetes health monitoring and management and helps lower the risks of vision loss or blindness caused by diabetic eye complications.

"Point-of-Care AI-DR is a collaboration of human and artificial intelligence through the expertise of ophthalmologists and AI analysis. It uses complementary medical AI models to perform individual diagnostic tasks such as classifying and detecting symptoms to improve the efficiency of overall interpretation," said Dr Pang-An Ting, ITRI general director of Information and Communications Research Laboratories.