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Researchers use AI to diagnose diabetic eye disease

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The algorithm can accurately and reliably spot the presence of fluid from damaged blood vessels, or exudate, inside the retina.



A team of Australian-Brazilian researchers led by RMIT University have developed an image-processing algorithm that can automatically detect one of the key signs of Diabetic retinopathy, fluid on the retina, with an accuracy rate of 98%.

Fluorescein angiography and optical coherence tomography scans are currently the most accurate clinical methods for diagnosing diabetic retinopathy.

An alternative and cheaper method is analysing images of the retina that can be taken with relatively inexpensive equipment called fundus cameras, but the process is manual, time-consuming and less reliable.

To automate the analysis of fundus images, researchers in the Biosignals Laboratory in the School of Engineering at RMIT, together with collaborators in Brazil, used deep learning and artificial intelligence techniques.

The algorithm they developed can accurately and reliably spot the presence of fluid from damaged blood vessels, or exudate, inside the retina.

The researchers hope their method could eventually be used for widespread screening of at-risk populations. The researchers are in discussions with manufacturers of fundus cameras about potential collaborations to advance the technology.