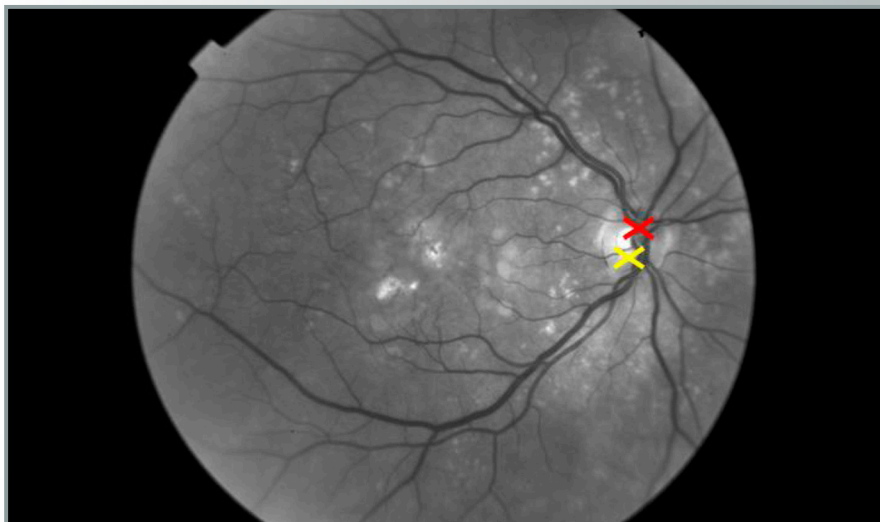


Method for Confidence Metric in Optic Disk Location in Retinal Images

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Technology Summary

To improve accuracy in diagnosis of retinal disease, ORNL researchers invented a method for assigning a confidence metric to computer-aided optic disc analysis. The physical condition of the optic disk determines the presence of various ophthalmic pathologies, including glaucoma and diabetic retinopathy. Unfortunately, localization of the optic disk and detection of its boundaries on the retinal image are not easy tasks. With this invention, the review process can be entirely automated.

Current methods for evaluation of retinal health require a patient to visit a highly trained specialist or a retinal reading center that uses computer-aided assessment. To improve this process, research is under way to develop automated techniques to analyze retinal images; however, even the best methods misdiagnose diseases between 5% and 20% of the time.

This invention offers two different methods to compare locations of the optic disk. When the distance between two locations is above a threshold, the detection is considered low confidence; when the distance is small, it is considered high confidence. Depending on the conclusion, the method can flag the image for further review by an ophthalmic professional.

Advantages

- Potentially higher success rate of accurate optic disk detection on retinal images
- Rated confidence levels assignments

Potential Applications

- Optic disk detection
- Disease screening

Patent

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