Novel layer segmentation algorithm for optical coherence tomography images

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Technology description

Background

There exist algorithms to measure the entire thickness of the retina and NFL, they are not capable of segment retina into the above mentioned sub-layers. Moreover, with the existing algorithms, it is not possible to measure nerve fiber layer (NFL) thickness on macular region, which may be important for glaucoma assessment.

Technology

University researchers have developed a novel algorithm that enables us to quantify various retinal layers helping ophthalmologists to diagnose and evaluate a variety of disease status including glaucoma, diabetic retinopathy, and age-related macular degeneration. This novel algorithm automatically segments multiple layer structures within a cross-sectional image of the human retina acquired using optical coherence tomography (OCT).

Application area

* Diagnoses of ocular diseases involving retina (e.g. glaucoma, diabetic retinopathy etc.)
* Assess progression and status of these pathologies
* OCT users

Advantages

* First working algorithm for retinal segmentation on OCT images that measures thickness of the following 5 important retinal layers.

Institution

University of Pittsburgh

Inventors

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