UCI Beall
Applied Innovation
Research Translation Group

Research Translation Group   Available Technologies   Contact Us

Request Information

Permalink

Advanced Imaging By LASER-Trained Algorithms Used To Process Broad-Field Light Photography and Videography

Tech ID: 32327 / UC Case 2019-228-0

BRIEF DESCRIPTION

Diagnosing retinal disease, which affects over 200 million people worldwide, requires expensive and complicated analysis of the structure and function of retinal tissue. Recently, UCI developed a training algorithm which, for the first time, is able to assess tissue health from images collected using more common and less expensive optics.

SUGGESTED USES

• For the analysis and diagnosis of retinal tissue

FEATURES/BENEFITS

• Inexpensive: The machine learning algorithm is able to extract relevant tissue information from images collected from standard and inexpensive optics.

• Small: The conditioned light source used here is small, making the platform highly portable and able to be used in remote locations.

• Powerful: Despite its small size, this platform allows for the extraction of a wide array of tissue parameters from a small set of easy-to-collect images.

TECHNOLOGY DESCRIPTION

Hyperspectral imaging (HSI) and dual spectral cameras are common methods used for analysis of retinal tissue, where 3D imaging and O2 levels are crucial aspects of diagnostics. However, these techniques are often performed separately and post-imaging analysis can often be long and complicated, requiring trained specialists.

Recently, UCI developed a more general platform for retinal assessment which combines the functionality of both HSI and dual spectral cameras. The platform also contains sophisticated machine learning algorithms to quickly and accurately process the multidimensional data. In this way, the method directly extracts retinal conditions such as tissue structure, O2 saturation, and health from images that otherwise would never yield this information.

STATE OF DEVELOPMENT

Concept stage. Prototype in development.

CONTACT

Richard Y. Tun
tunr@uci.edu
tel: 949-824-3586.

INTRODUCING
UC TechAlerts
New technology matches delivered to your email at your preferred schedule
Q SEARCH ▸ ⬥ SAVE SEARCH
Learn More

INVENTORS

» Browne, Andrew

OTHER INFORMATION

CATEGORIZED AS

» **Optics and Photonics**
　» All Optics and Photonics
» **Imaging**
　» 3D/Immersive
　» Medical
　» Software
» **Medical**
　» Imaging
　» Software

RELATED CASES

PATENT STATUS

Patent Pending

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS
▶ Precision 3D Modeling Technology
▶ Advanced Imaging by LASER-Trained Algorithms Used to Process Broad-Field Light Photography and Videography

UCI Beall
Applied Innovation

5270 California Avenue / Irvine,CA
92697-7700 / Tel: 949.824.2683