EyeCV: A Novel Tool for Rapid, Accurate, and Reproducible Screening of Endothelial Cell Morphology in Diseased and Healthy Corneas

Tech ID: 34844 / UC Case 2023-517-0

ABSTRACT

Researchers at the University of California, Davis have developed a machine learning-based platform for early, accurate, and efficient detection of endothelial disease from corneal images assessment.

FULL DESCRIPTION

This technology is a machine learning solution that efficiently evaluates the morphological features of endothelial cells. The technology includes a custom dataset for training the model, segmentation based on deep learning, and a comprehensive analysis report to assist veterinarians. It serves as a diagnostic tool, removing subjectivity from endothelial cell evaluations and supporting the assessment of treatment outcomes.

APPLICATIONS

- Diagnostic tool for detecting endothelial cell diseases in animals.
- Platform for tracking disease progression and treatment effectiveness.
- Clinical decision support tool for veterinary care.
- Potential application in human subjects with appropriate data.

FEATURES/BENEFITS

- Fast and accurate evaluation of endothelial cells.
- Exceptional dataset for training the model.
- Productive platform to assess the efficiency of treatment protocols.
- Offers better clinical decision support in veterinary care.
- Mitigates time-consuming manual methods for assessing corneal endothelial cells.
- Addresses subjectivity and variability in endothelial cell evaluations.
- Solves difficulty in tracking disease progression and measuring the impact of treatments.

PATENT STATUS

Country	Type	Number	Dated	Case
Patent Cooperation Treaty	Reference for National Filings	WO 2024/182683	09/06/2024	2023-517

Patent Pending

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OTHER INFORMATION

KEYWORDS

artificial intelligence, corneal endothelial cell disease, deep learning, disease progression, quantitative morphology

CATEGORIZED AS

- **Biotechnology**
  - Health
  - **Imaging**
    - Medical
  - **Medical**
    - Diagnostics
    - Disease: Ophthalmology and Optometry
    - Imaging
    - Screening
  - **Veterinary**
    - Companion Animal
    - Diagnostics
    - Therapeutics

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ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

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