Innovation and Commercialization

UNIVERSITY OF TEXAS ARLINGTON

Cancer Cell Gesture Identification for Early Diagnosis

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TECHNOLOGY NEED

Cancer is one of the most life-threatening diseases in the world. As such, diagnosing whether cells are cancerous or non-cancerous plays an important in evaluating further treatment options. However, currently available cancer diagnosing equipment cannot extract information from samples which contain either huge number of cells or which contain low concentration of cells. Therefore, there is a need for an effective cancer diagnosis approach.

INVENTION DESCRIPTION/SOLUTION

We offer a novel predictive computational framework to diagnose cancer. It involves extracting multiple cell feature vectors from time-lapse optical images and quantifying gestures based on these features. These gestures are then compared against a database that has been trained with gestures of cancerous cells. Based on the process, the system predicts if the cells are cancerous or non-cancerous. A total of 50 characteristic features were defined and extracted. The approach was demonstrated to selectively detect metastatic human glioblastoma (hGBM) and astrocytes with an average accuracy of 85% and is one of a kind to recognize cancer by gesture analysis.

APPLICATIONS

- Cancer cell classification
- Pathology
- Life science research

KEY BENEFITS

- Extraction of 50 characteristic features
- Detection of low concentration of cancer samples
- Prediction with an accuracy of 85%

STAGE OF DEVELOPMENT
Prototype

INTELLECTUAL PROPERTY STATUS
Provisional

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