**Identification of Acute Lymphoblastic Leukemia in Microscopic Blood Image Using Image Processing and Machine Learning Algorithms**

**Objective:**

The main objective of this project is to leukemia in blood cells using machine learning algorithms for the classification purpose.it is taken over by the predicted value of the machine learning algorithm.

**Abstract:**

Identification of leukemia in blood is tedious process, a set of spatial domain features are extracted from the blood cells image to determine whether a tumor is acute lymphoblastic leukemia (ALL) or acute myeloid leukemia (AML). This problem is interesting because ALL and AML require different chemotherapy regimens. Proper classification greatly increases the likelihood of remission. The extracted features by the proposed methods are exploited to classify regions of interest (ROI's) into AML or ALL. A three-layer back-propagation neural network is used as a classifier. The results of the neural network for the extracted features are evaluated by calculating the classification rate compared to other techniques. The proposed technique is shown to be superior to the conventional methods with respect to classification accuracy and computational complexity

**Existing Method:**

* K means clustering
* Wavelet and Principal component analysis
* SVM classifier

**Drawbacks:**

* Difficult to get accurate results
* Not applicable for multiple images for lesion segmented in a short time
* Poor discriminatory power
* less classification accuracy

**Proposed Method:**

* DTCWT and GLCM Features
* NN Classifier
* Clustering

**Advantages:**

* The segmentation algorithm Proves to be simple and effective
* Gray scale Co-occurrence matrix performed well in BPN
* Better texture and edge representation
* Segmentation provides better clustering efficiency

**Block Diagram:**

Input Image

DT-CWT

Database Images

GLCM features

NN

PRE-PROCESSING

Abnormal

Normal

GLCM features

Segmentation

**Application:**

* Computer aided Diagnosis system for interstitial lung diseases in medical Application

**Software Required:**

* Matlab 2014a and above

**References:**

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[4] Subrajeet Mohapatra, Dipti Patra, “Automated Cell Nucleus Segmentation and Acute Leukemia Detection in Blood Microscopic Images, IEEE International Conference on Systems in Medicine and Biology, 2010

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