

# [While the best results that is with](https://assignbuster.com/while-the-best-results-that-is-with/)

While 8 theydeveloped a system called Leuko and they use consistency information toincrease differences among leukocytes. They used textural parameters built ongray level occurrence matrices (GLCM) that are energy, inertia, homogeneity andcorrelation. Feature selection is very important in developing Leuko systemthat is data reduction can be done so that classification algorithms can learnquickly and accurately. Classifier can standardize better from available data, results are easier to understand as well as reduce the time. 23 In thisresearch they built a system to identify the leukemia cell by using bone marrowimages. The system was constructed by using Support Vector Machine (SVM)classifier and exploit characteristics in blood cell images that allied totexture, geometry and statistical analysis. They stress on generation andselection of features to get the best recognition.

Textural parameters thathave been used are mean value, angular second momentum, contrast and entropy. Geometrical parameters are radius, perimeter, area, filled area, compactness, concavity, concavity points and symmetry. While parameters for statisticalanalysis are mean value and standard deviation for nucleus and cytoplasm, meanand standard deviation for gradient matrix, skewness and kurtosis for image andgradient matrix. Error of training data is 11. 87%, errors of testing data is21. 13%.

They just select 30 best features and this produce error of trainingdata to 13. 07% and errors of testing data to 18. 71%. 10 Used modifiedk nearest neighbor (KNN) to classify malaria parasite for microscopic images ofblood cell and the results are so good with error 0. 01%. 7 Then, they useartificial neural network 3 layers and 4 layers to identify malaria and thalassemia. They use microscopic images of blood cells and apply image processing techniquefor e.

g. image enhancement, edge erosion, color, size normalizing and many more. They found out that artificial neural network with 3 layers give the bestresults that is with error 2. 7454e (-0. 005) and rate of correct classification is86. 54%.

12 UsedEM-Algorithm to recognize types of leukocyte. First, the image pattern ischanged into a lower dimensional space by using principal component analysis. EM-algorithm is used to get the parameters of the Gaussian functions to modelthe probability distribution function of each class of cells. The images areclassified by getting the class conditional densities using Bayes’ theorem. Classification is done by choosing the class with the highest probability.

18Have detected ALL by using fractal features that is hands-off dimension toclassify a lymphocytic cell into normal lymphocyte or lymphoblast. 18 Alsoused fuzzy based segmentation technique to extract WBC nucleus from blood microscopeimages using color based clustering. At the end, they use SVM to classify. Theaccuracy of 93% was observed.

19Used global contrast stretching to enhance the images. By performing this, thevisual detail of blast cells can be increased and they do the segmentationbased on HSI color space. There are many day byapplications in medical images that use reinforcement learning. 9 And 20have used reinforcement learning (RL) in their work. They use RL in order toovercome some problems in medical images. Medical images have very similar graylevel and texture among the interested objects. Segmentation error may occurand increase.

Another problem is may be lack of a sufficient number of trainingsamples if a supervised learning technique is employed. By approaching RL