

College of Engineering Chengannur
Department of Computer Engineering
03CS6902 Mini Project
Abstract of Project Proposed
Automatic identification and counting of blood cells
using Deep learning

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Keywords: Machine learning, Deep learning, YOLO algorithm, Smear image, CBC(Complete blood cell count), KNN algorithm

Abstract

Blood testing is observed to be one of the most significant medical examination test to evaluate health condition. In pathology labs, different types of blood cells are counted to diagnose the diseases in patients including anemia, infection and leukemia. The blood constitutes mainly three types of cells such as red blood cells (RBCs), white blood cells (WBCs), and platelets. Traditionally blood cells are counted manually using haemocytometer along with other laboratory equipment's and chemical compounds, which is time intense, tedious, and entails lot of technical expertise. This work presents a deep learning approach for automatic identification and counting of three types of blood cells using 'you only look once' (YOLO) algorithm. YOLO is a state-of-the-art object detection classification algorithm. It requires only one forward propagation pass through the network to make a fast prediction for both image class and location. In this approach it automatically identifies and counts blood cells from a blood smear image using YOLO. To improve accuracy, the method employed KNN and IOU (Intersection of union) based method to remove multiple counting of the same object.

References

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Decision: Approved