Abstract

Hypochromic and Normochromic anemia have taken prodigious possession in the research field. In this paper, we have proposed a process that will feasibly detect the Hypochromic and Normochromic anemia. The task that goes elementarily in image processing is the reduction of the noise from image. Therefor, Harr Wavelet (level-2) has been applied as a tool to contrive the process of noise reduction from image. Extraction of significant information from the image is the vital job. For this purpose, segmentation is used. Here, Watershed transform has been applied. Significance has been provided in the calculation of the number of true pixels of blood cells and filled (whereas the blood cells filled with truth value (1) using imfill()) blood cells. Hereafter, their ratio will have been employed for the detection of the Hypochromic and Normochromic anemia. The outcome of the proposed process exhibits the accuracy of 96.7% whither manually processed result is lower.

References
1. "What do normal red blood cells look like?", Pathologystudent.com, 2016,
2. J. Bohlius et al., "Cancer-related anemia and recombinant human erythropoietin:
[doi:10.1038/ncponc0451].
3. Y. Balarajan et al., "Anaemia in low-income and middle-income countries," The Lancet
5. A. Ghosh et al., "Microcytic Hypochromic Anemia in Pediatric Age Group: A Hospital
Based Study in Nepal," American Journal of Public Health Research, vol. 3, no. 4A,
57-61(2015)[doi: 10.12691/ajphr-3-4A-12].
6. T. Johnson-Wimbly and D. Graham, "Diagnosis and management of iron deficiency
7. S.Chandrasiri, P.Samarasinghe, "Automatic anemia identification through morphological
image processing,"In 7th International Conference on Information and Automation for
10. M. Taherisadr et al., "A New approach to red blood cell classification using morphological
11. S. Chourasiya, G.U. Rani, "Automatic red blood cell counting using watershed
12. S. Abbas, "Microscopic images dataset for automation of RBCs counting", Data in Brief,
13. K. S. Sidhu, B. S. Khaira, I. S. Virk, "Medical image denoising in the wavelet domain
using haar and DB3 filtering," International Refereed Journal of Engineering and Science, 1(1),
001-008 (2012).
14. J.M. Sharif et al., "Red blood cell segmentation using masking and watershed algorithm:
15. K. Gopinath et al., "Novel method for clearing red blood cell debris from BacT/ALERT
blood culture medium for improved microscopic and antimycobacterial drug susceptibility test

Index Terms

Computer Science           Image Processing
Keywords

Hypochromic, Normochromic, Harr Wavelet, Watershed Transform, Hemoglobin