A Particle Swarm based Approach for Classification of Cancer based on CT Scan

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Abstract

In this paper, the technique is propose that made use of Particle Swarm Optimization (PSO) algorithm for tumor detection by using the techniques of Image Processing. This proposed algorithm is based on three steps. First, it identities the affected area, Second, it makes enhancement to the image, Finally, it performs segmentation and extraction of characteristics of the affected area. The propose approach takes any medical image of Computed Tomography CT scan, and provides indicators for physicians decision-making to build treatment plans with minimal diagnostic errors and more accurate description of the treatment plan at minimal cost. The proposed approach has been implemented and tested using data from Oncology Center (the National Center for Oncology Therapy, Hadramout El Wadi, Yemen) and shown very promising.

References

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Index Terms

Computer Science  Image Processing

Keywords

CT scan, Particle Swarm Optimization (PSO) algorithm, Image Processing, Image Classification, cancer, Artificial Intelligence, Feature Extraction, Contrast Improvement Index(CII) .