Abstract

Brain tumors are the second leading cause of cancer deaths in human throughout the world. Therefore accurate diagnosis is important for successful treatment of brain tumor. When modeling a complex, poorly defined problem with hundreds of possible inputs one must identify the significant inputs before any known modeling techniques can be applied. As generally the data contains many redundant features in it. Redundant features are those which provide no more information than the selected features and irrelevant features provide no more useful information in any context. Feature selection is the process in which one can select a subset of relevant features for use in model construction. Features selection techniques are very useful because they provide: improved model interpretability, shorter training times and enhanced generalization by reducing over-fitting. For offering these benefits features selection techniques have become an apparent need in many bio-informatics applications such as brain MR images. In order to get best information a new fuzzy feature selection approach for MR brain tumor image have been used for the first time. The proposed method presents the two stages fuzzy curves and fuzzy surfaces. Fuzzy curves are used to isolate significant features from input and fuzzy surfaces to eliminate input features dependent on the significant input features. Results show that this method is able to achieve a very good reduction in the number of features.
Fuzzy Features Selection Technique for Brain MR Images

References

- ZHANG Nan, &quot;Feature selection based segmentation of multi-Source images: application to brain tumor segmentation in multi-sequence MRI&quot;, © [N. Zhang],
- , INSA de Lyon, tous droits reserves
- J. B. Antoine Maintz, Petra A. van den Elsen and Max A. Viergever, &quot;Registration of SPECT and MR brain images using a fuzzy surface&quot;, Radiological Science Laboratory, Stanford University School of Medicine, Stanford, CA, USA.
Fuzzy Features Selection Technique for Brain MR Images


- Yan-cheng zhang, Han-ping mao, Bo hu, Ming-xi li, "Features Selection Of Cotton

Index Terms

Computer Science
Applied Sciences

Keywords

Fuzzy Curves Fuzzy Surfaces Features Selection Image Segmentation.