Abstract

A natural scene image contains object categories which form ambiguous boundaries. Measuring this ambiguity while classifying an image, is a challenging task. A scene image belongs to multiple categories at a time which makes a task of classification multi label one. Binary classification fails to capture this ambiguity while classifying the scene image into one of mutually exclusive classes. This problem can be handled by applying fuzzy logic with non-mutually exclusive class categories. This project work provides a ranking based on class membership instead of binary classification.
Multi-Label Classification of a Scene Image using Fuzzy Logic

- B. S. Manjunathi and W. Y. Ma, "Texture Features for Browsing and Retrieval of Image Data", IEEE transactions on pattern analysis and machine intelligence, vol. 18, no. 8, pp. 837-842, August 1996.
- Y. Dong, D. Tao, and X. Li, "Nonnegative Multi-resolution Representation-Based Texture Image Classification", ACM Transactions on Intelligent Systems and Technology, Vo. 7, No. 1, Article 4, pp. 1-21, September 2015.
Janhavi Shirke and N. M. Shahane, "Qualitative understanding of a scene image," cPGCON 2016, pp. 1-6.


Richard O. Duda, Peter Hart and David Stork, "Pattern Classification," Wiley India Pvt. Ltd.

**Index Terms**

Computer Science  
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**Keywords**

Fuzzy Logic  
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