Abstract
This paper describes a novel fuzzy based approach to determine the complexity of an image which is independent of a human perception criterion. The proposed method determines the complexity of an image based on the analysis of its edge level percentages. First, the method determines the complexity class of an image from among three classes, Little Complex, More or Less Complex, and Very Complex using centroids obtained from a fuzzy clustering process. Second, the membership value for that class is computed by a set of interval mapping functions. The method is very robust and consistent since it does not incorporate any a priori human evaluation of complexity. Results of the method show a correlation with human complexity values obtained in an independent evaluation test; however, the values obtained with our method are consistent and not subject to the viewers subjectivity. The paper also shows promising results in applying the method to an application of determining the edges of images when compared with a crisp image complexity method.

Keywords
Image complexity, Fuzzy logic, Image processing