

## عنوان مقاله:

ON FUZZY NEIGHBORHOOD BASED CLUSTERING ALGORITHM WITH LOW COMPLEXITY

## محل انتشار:

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## خلاصه مقاله:

The main purpose of this paper is to achieve improvement in the speed of Fuzzy Joint Points (FJP) algorithm. Since FJP approach is a basis for fuzzy neighborhood based clustering algorithms such as Noise-Robust FJP (NRFJP) and Fuzzy Neighborhood DBSCAN (FN-DBSCAN), improving FJP algorithm would be an important achievement in terms of these FJP-based methods. Although FJP has many advantages such as robustness, auto detection of the optimal number of clusters by using cluster validity, independency from scale, etc., it is a little bit slow. In order to eliminate this disadvantage, by improving the FJP algorithm, we propose a novel Modified FJP algorithm, which theoretically runs approximately  $n = \log^2 n$  times faster and which is less complex than the FJP algorithm. We evaluated the performance of the Modified FJP algorithm both analytically and experimentally.

## کلمات کلیدی:

Clustering, Fuzzy neighborhood relation, Complexity, Modified FJP

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