

## CHAPTER 28

### MATHEMATICAL SCIENCES COMPUTER SCIENCE

#### Doctoral Theses

382. PURI (Charu)  
**Objective Function Based Fuzzy Subspace Clustering.**  
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#### *Abstract*

Proposes modifications of the objective function based algorithms for the purpose of subspace clustering namely Gustafson Kessel algorithm, Rough Fuzzy c-Means algorithm, Fuzzy Entropy clustering algorithm, and possibilistic c-Means algorithm. The output of each algorithm comprises of a partitioning of the data set at hand along with assignment of weights to attributed specific to each cluster. Higher weight of an attribute in a cluster indicates its greater relevance to that cluster. It has proved the convergence of the algorithms presented in the thesis and also through extensive experimentation that the proposed algorithms for subspace clustering either outperform the existing algorithms or produce comparable in terms of validity measured and are effective in detecting low dimensional clusters embeded in high dimensional spaces.

#### *Contents*

1. Introduction. 2. Background. 3. Gustafson-Kessel Subspace Clustering. 4. Rough fuzzy c-Means subspace clustering. 5. Entropy based Gustafon-Kessel subspace clustering. 6. Gutafson Kessel possibilistic subspace clustering. 7. Conclusion and future work. 8. Bibliography.