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Mathematical Problems in Engineering

Special Issue on

**Theory and Applications of Data Clustering**

# CALL FOR PAPERS

Data clustering aims at organizing a set of records into a set of groups so that the overall similarity between the records within a group is maximized while minimizing the similarity with the records in the other groups. The data clustering is a state-of-the-art problem with increasing number of applications. For decades, data clustering problems have been identified in many applications and domains such as computer vision and pattern recognition (e.g., video and image analysis for information retrieval, object recognition, image segmentation, and point clustering), networks (e.g., identification of web communities), databases and computing (facing privacy in databases), statistical physics, and mechanics (e.g., understanding phase transitions, vibration control, and fracture identification using acoustic emission data).

Several definitions and validation measures of data clustering problem have been used on different applications in engineering. For instance, the goal of the classical clustering problem is to find the clusters that optimize a predefined criterion while the goal of the micro aggregation problem is to determine the clusters under the constraint of a given minimum cluster size for masking micro data. This special issue is particularly focused on fundamental and practical issues in data clustering.

Potential topics include, but are not limited to:

- ▶ Clustering methods
- ▶ Hierarchical and partitional clustering
- ▶ Spectral clustering
- ▶ Clustering validation measures
- ▶ Estimation of the number of clusters
- ▶ Statistical disclosure control, micro aggregation
- ▶ Consensus clustering
- ▶ Graph clustering
- ▶ Trajectory and time series clustering
- ▶ Datasets for clustering
- ▶ Benchmarking
- ▶ Application oriented clustering problems

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