

## **An efficient volume-constrained MBO scheme for data clustering and classification.**

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We propose a novel efficient algorithm for clustering and classification tasks based on the famous MBO scheme. The algorithm is based on new geometric insights of the MBO scheme with volume equalities and inequalities. Furthermore, we present a rigorous efficiency analysis based on the gradient-flow interpretation of the underlying process and give clear regimes for the choice of hyperparameters informed by recent analytical results of one of the authors and Lelmi (JMLR 2023).