We address the problem of image classification. Our aim is to improve the performance of MLiT: mixture of Gaussians under Linear transformations, a feature-based classifier proposed in [1] aiming to reduce dimensionality based on a linear transformation which is not restricted to be orthogonal. Boosting might offer an interesting solution by improving the performance of a given base classification algorithm. In this paper, we propose to integrate MLiT within the framework of AdaBoost, which is a widely applied method for boosting. For experimental validation, we have evaluated the proposed method on the four UCI data sets (Vehicle, OpticDigit, WDBC, WPBC) [2] and the authorâs own. Boosting has proved capable of enhancing the performance of the base classifier on two data sets with improvements of up to 12.8%.