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**LIN XIAO**, Microsoft Research

*Optimizing Orthogonality*

We consider a new method for the problem of multi-class classification in machine learning. Our formulation involves minimizing the weighted sum of the absolute values of the inner products between a set of vectors, which promotes orthogonality between the vectors. We give a sufficient condition on the weights such that this objective is a convex function of all the vectors. We also propose an efficient dual-averaging method for solving such a nonsmooth convex optimization problem.