## The Multiset Sampler

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## Abstract

Motivated by statistical inference problems in population genetics, we present the multiset sampler, a new algorithm for drawing samples from a distribution. The multiset sampler can be viewed as a more general data augmentation scheme, and can be used to improve the efficiency of the Markov chain Monte Carlo algorithm associated with the standard data augmentation strategy. We give the convergence properties of the multiset sampler and demonstrate its efficiency in several examples.