

Matrix factorization produces an approximate decomposition ZA from a data matrix X , where we think of A as having much fewer rows than X (dimensionality reduction). The bayesian matrix factorization where we define a likelihood $p(X|Z,A)$ is a calculation we are already very familiar with. Then the authors define equivalence classes over all matrices by separating the zero columns from the nonzero columns as opposed to left ordering which is what we were doing before. They then perform variational inference to decompose the matrices. They also propose Infinite Nonnegative Matrix Factorization by imposing nonnegative constraints on A .