

Recommendation engines have a number of different applications. From books to movies, they enable the analysis and prediction of consumer preferences. The prevalence of recommender systems in both the business and computational world has led to clear advances in prediction models over the past years.

Current R packages include `recoSystem` and `recommenderlab`. However, our new package, `rectools`, currently under development, extends its capabilities in several directions. One of the most important differences is that `rectools` allows users to incorporate covariates, such as age and gender, to improve predictive ability and better understand consumer behavior.

Our software incorporates a number of different methods, such as non-negative matrix factorization, naive latent factor and maximum likelihood random effects models, and nearest neighbor methods. In addition to our incorporation of covariate capabilities, `rectools` also integrates several kinds of parallel computation.

Code is available on GitHub, at <https://github.com/Pooja-Rajkumar/rectools>