Collaborative Translational Metric Learning

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Background

Matrix Factorization (MF)

- MF is based on inner product operation, which violates triangle inequality
- Previous work: Metric learning-based method [WWW17]
  - Project users and items into a low-dimensional metric space

• User is projected to a single point
• Not easy to modeling intensity and heterogeneity of user-item relationship

Approach

• Adopt “Translation mechanism”

Evaluation

\[ \| \alpha_u - \beta_i \|_2^2 > \| \alpha_u + r_{ui} - \beta_i \|_2^2 \]

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For more details including data and implementation code, please visit: https://github.com/pcy1302/TransCF