LRMF (ALS) EXPLAINED – ADVANCED 3

Algorithm: alternating-least-squares (als)

alternate between recomputing user-factors and item-factors.

Step 1. recomputing all user factors X

$$egin{aligned} oldsymbol{x}_u &= (oldsymbol{Y}^T oldsymbol{C}^u Y + \lambda I)^{-1} oldsymbol{Y}^T oldsymbol{C}^u p(u) \ where oldsymbol{Y}^T oldsymbol{C}^u Y &= oldsymbol{Y}^T Y + oldsymbol{Y}^T (oldsymbol{C}^u - I) Y \end{aligned}$$

Step 2. recomputing all item factors Y

$$y_i = (X^T C^i X + \lambda I)^{-1} X^T C^i p(i)$$

Step 3. Iterate over step 1 and step 2, till stablize



SOLUTION

> RANKING