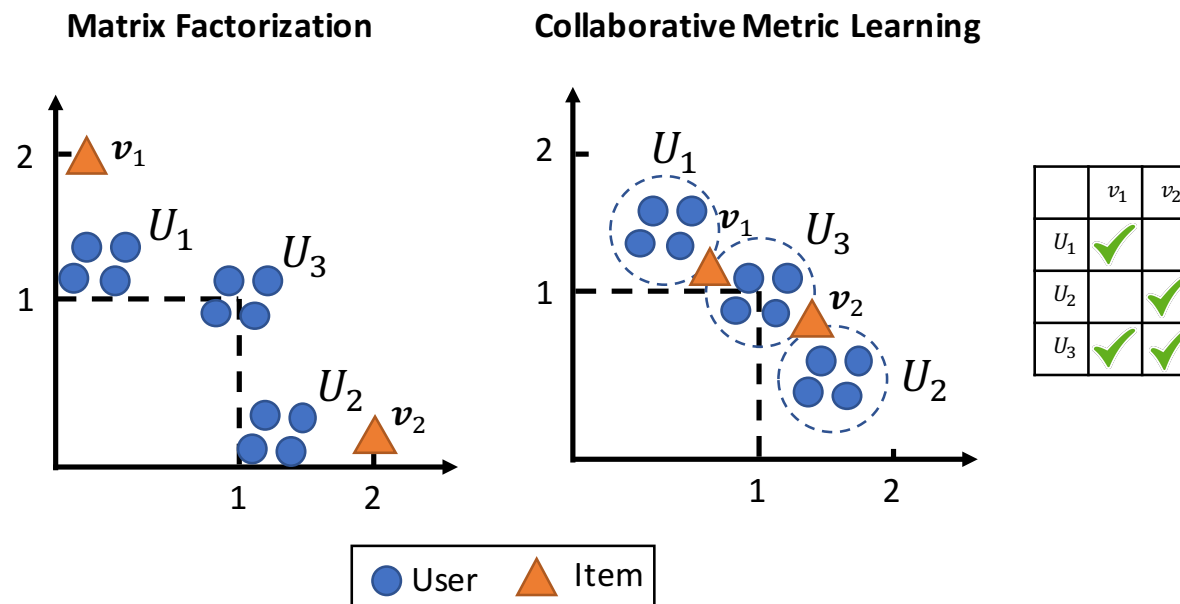# Collaborative Metric Learning (CML) (2/3)

Profits from the phenomenon of *similarity propagation*, because distance metric d respects the *triangle inequality*:

$$\forall u, i, j: \quad d(i,j) \leq d(u,i) + d(u,j)$$

$\rightarrow$ Similarity of (u,i) and (u,j) is propagated to (i,j).

$\rightarrow$ User-user and item-item similarities automatically learned.