Section Data Example in the Training Set
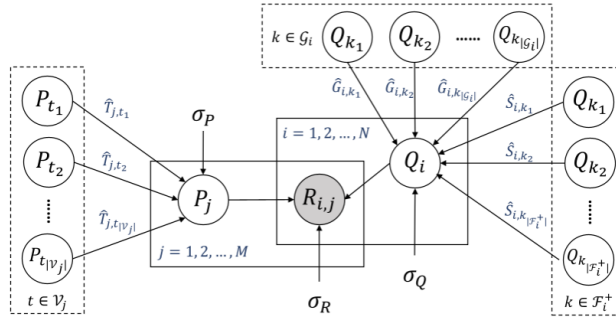
Query: What kind of information does the factor R i, j hold?

Text:
RECOMMENDATION MODEL
In this section, we present our Joint Topic-Semantic-aware Matrix Factorization (JTS-MF) model for online social votings, in which social relationship, group a liation, and topic-semantic similarities are combined and taken into account for voting recommendation in a comprehensive manner.Motivated by Locally Linear Embedding [23] which tries to preserve the local linear dependency among inputs in the low-dimensional embedding space, we expect to keep inter-user and inter-voting topic-semantic similarities in latent feature space as well.To this end, in JTS-MF model, while the rating R i, j is factorized as user latent feature Q i and voting latent feature P j , we deliberately enforce Q i and P j to be dependent on their social-topic-semantic similar counterparts, respectively.e graphic model of JTS-MF model is as shown in Figure 5.

Figure: Figure 5

$k \in \mathcal{G}_i$ Q_{k_1} Q_{k_2} ⋯⋯ $Q_{k_{|\mathcal{G}_i|}}$

P_{t_1} $\hat{T}_{j,t_1}$ σ_P $\hat{G}_{i,k_1}$ $\hat{G}_{i,k_2}$ $\hat{G}_{i,k_{|\mathcal{G}_i|}}$ $\hat{S}_{i,k_1}$ Q_{k_1}

P_{t_2} $\hat{T}_{j,t_2}$ $i = 1, 2, …, N$ $\hat{S}_{i,k_2}$ Q_{k_2}

$\hat{T}_{j,t_{|v_j|}}$ P_j $R_{i,j}$ Q_i $\hat{S}_{i,k_{|\mathcal{F}_i^+|}}$

$P_{t_{|v_j|}}$ $j = 1, 2, …, M$ $Q_{k_{|\mathcal{F}_i^+|}}$

$t \in \mathcal{V}_j$ σ_R σ_Q $k \in \mathcal{F}_i^+$

Caption: Fig. 5: Graphic Model of JTS-MF.

Answer 1: The factor R i, j represents the rating that user i gave to voting j.
Answer 2: The node labeled R i, j is a factor that represents the rating given by user i to a voting j. It is the core of the model, representing the essence of user interaction with the voting system. This node's existence suggests that the model is primarily concerned with understanding and predicting user ratings for voting content.

Text-only Data Example in the Test Set

Query: How does the distribution of output image transform tasks among N workers impact the efficiency of the final synchronization task?

Text: The number of output image transform tasks equals the number of output images times the batch size. The tasks are executed by all N workers, such that each worker picks up an arbitrary task and executes it. The last output image transform task to finish also executes the final synchronization task, which frees the memory required for the output image transforms.

Answer 1: The distribution allows for parallel processing, potentially speeding up the final synchronization task.
Answer 2: Ensures faster task completion, synchronization efficiency relies on all tasks' completion.