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Personalization of Indexed Content via Collaborative Filtering and Topic Modeling.

The USC Shoah Foundation’s Visual History archive hosts a large collection of videotaped interviews with genocide survivors and witnesses, each tagged with a number of keywords describing the content. Existing search tools for the archive rank relevant testimonies with respect to a query regardless of the information about the specific user who makes the query. We designed a collaborative latent semantic model to discover users’ underlying preferences, which in turn are used to recommend new relevant testimonies and rank the query results in a personalized fashion. The core idea in ranking testimonies beyond naive relevance matching is to make connections between users’ past queries and the testimonies through latent semantic spaces underlying the users’ interest and the testimonies’ semantic similarities surfaced via keywords. Specifically, we formulate the problem as completing a matrix that describes users’ interests in different testimonies by joint factorization of matrices that describe the relevance of index terms to testimonies and user interests respectively. We test our proposed solution on USC Shoah Foundation’s historical data and compare our results with the state of the art methods. (Received September 25, 2017)