

# Group Recommendation for Smart TV

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## Motivation

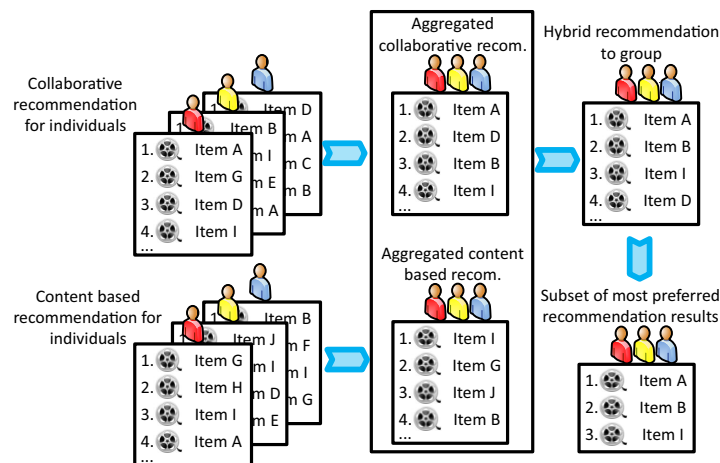
- Increasing popularity of smart TVs and huge movie databases
- Large offer, but users usually see only few items per session
- Users can't find interesting items because of the amount of content available
- Today's user models don't capture user's preferences enough
- Lack of approaches for group recommendation

## Group Recommendation

- Hybrid method using features of multiple recommendation approaches
- Collaborative recommendation enhancing results relevance from content based approach point of view
- Proposed method is based on the aggregation of single user recommendations
- Considering of social relations in group, focusing to users' importance
- Recommending top items to watch for specific group of users

## User Model

- Novel vector model enhanced by vector personalized weights
- 2 level preference modeling
  - vector preference (e.g. directors or genres preference)
  - element preference (e.g. tarantino, sci-fi preference)
- Domain independent concept (by replacing domain specific vectors)



Weights	Vectors
Global Individual Final	<b>Genres</b> [comedy;3.0;3],[action;3.8;5],[drama;1.5;2]
Global Individual Final	<b>Keywords</b> [hobit;4.5;2],[murder;3.1;4],[love;1.5;1]
Global Individual Final	<b>Directors</b> [jackson;4.1;5],[tarantino;4.2;4],[conan;1.2;2]
Global Individual Final	<b>Actors</b> [parsons;4.1;3],[streep;3.2;8],[cuoco;4.1;3]
Global Individual Final	<b>Items ID</b> [sherlock;5.0;1],[ironman;3.0;1],[hours;4.9;1]

## Results

- Novel user model outperforming the state-of-the-art approaches
- Hybrid recommendation method for single and group of users
- Increase precision of recommendation in comparison with collaborative and content based approaches
- Best improvement obtained in Precision@1 (optimal for multimedia domain)
- Evaluation performed over standard datasets (comparison to state-of-the-art)