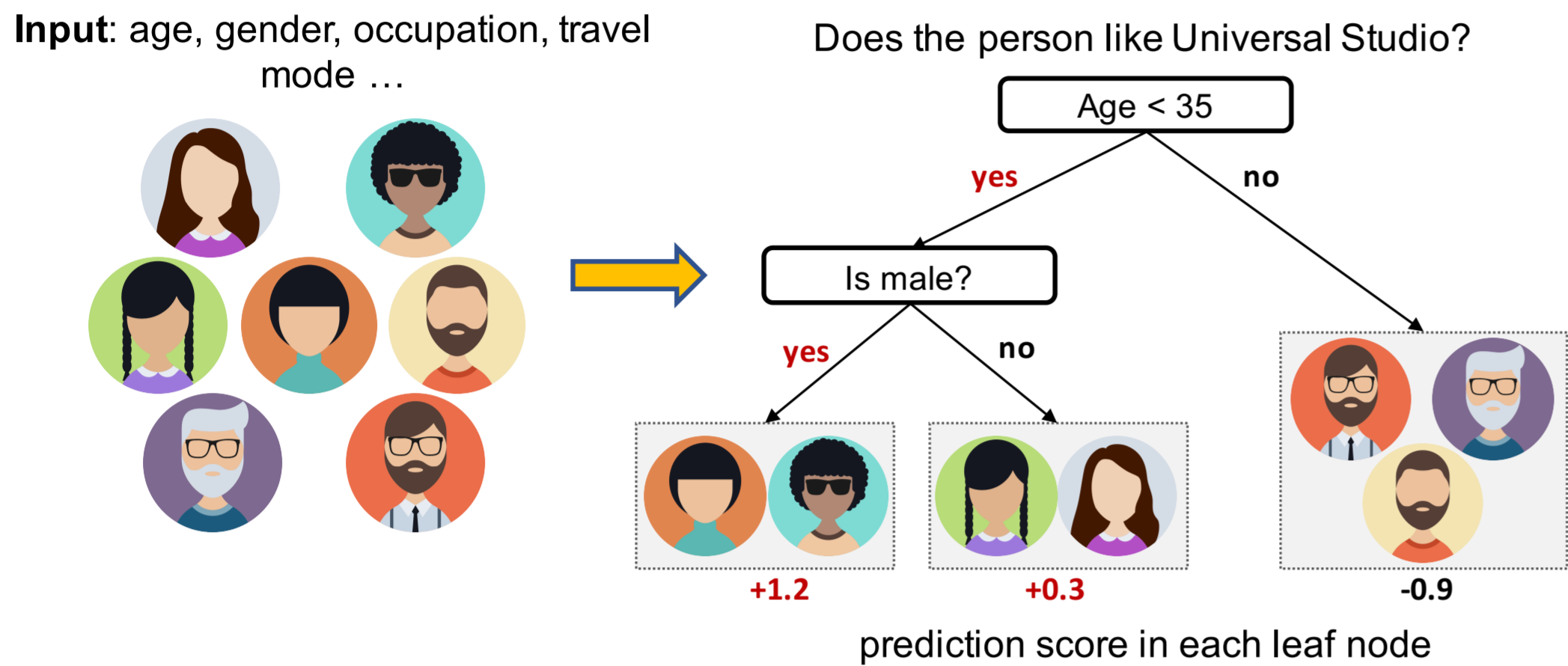


Xiang Wang, Xiangnan He, Liqiang Nie, Tat-Seng Chua

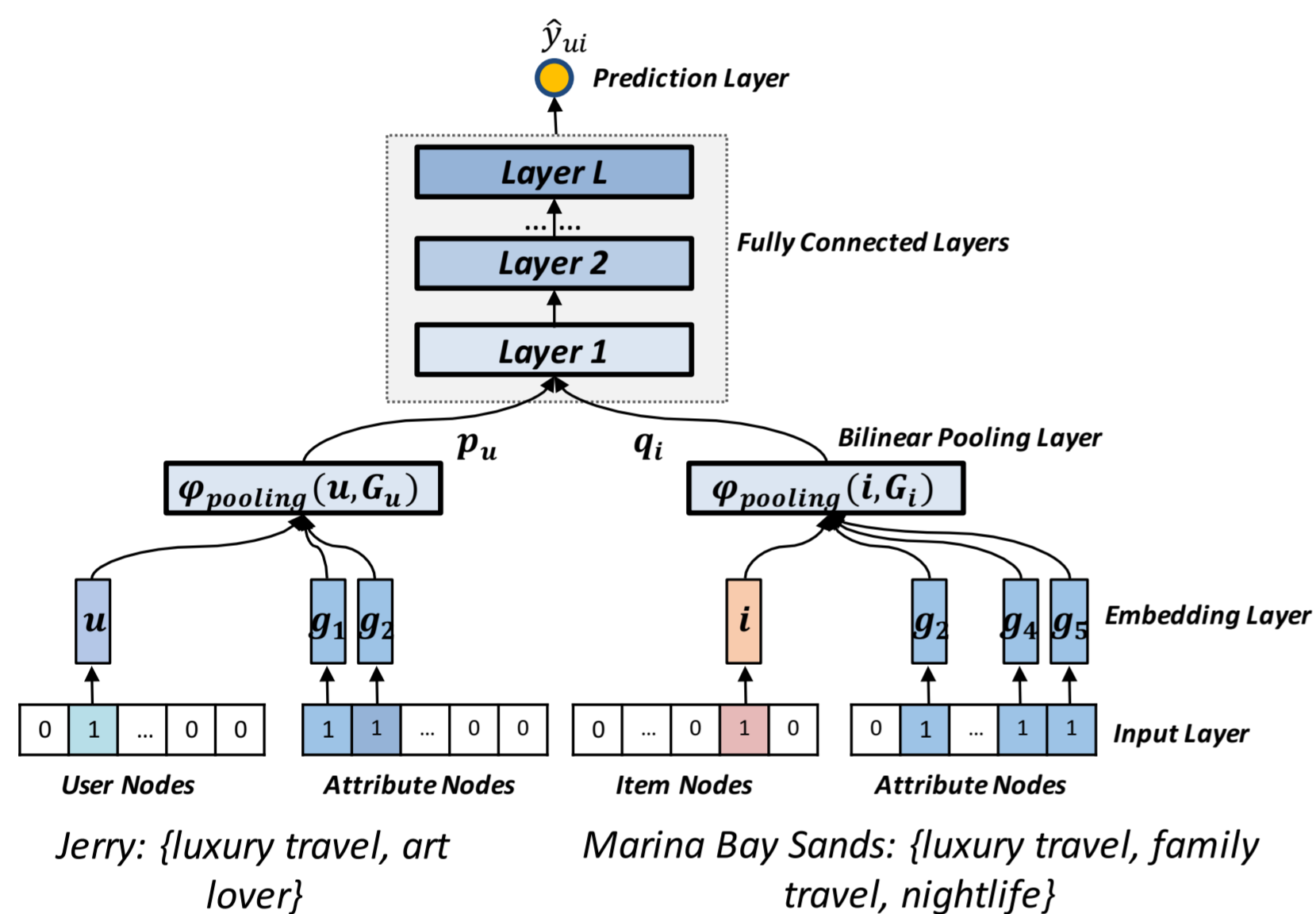
xiangwang@u.nus.edu, {xiangnanhe, nieliqiang}@gmail.com, chuats@comp.nus.edu.sg

Background

- Tree-based models are easily explainable, but they have limited representation power.



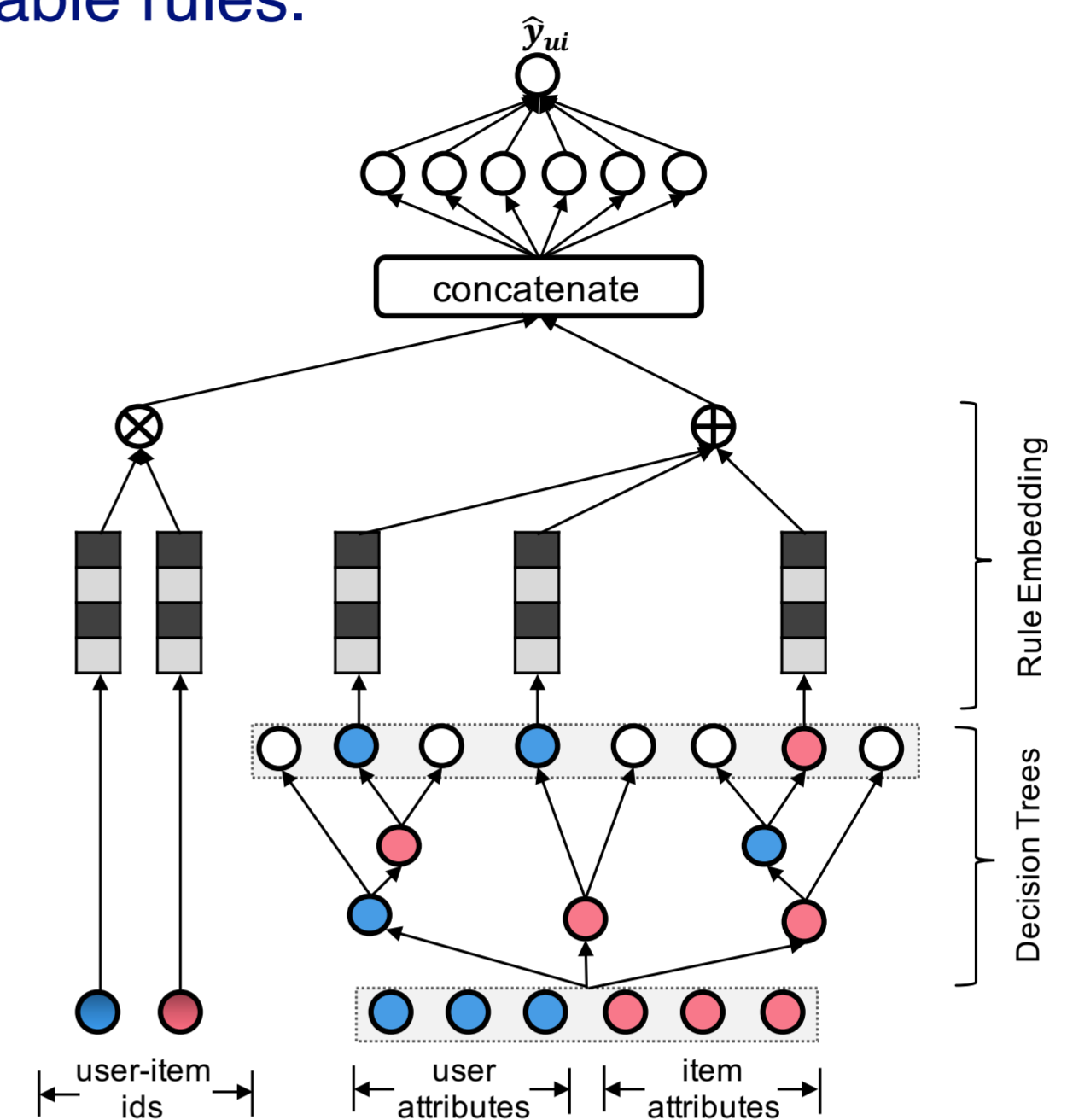
- Neural recommendation methods (e.g., NCF and NFM) operate as a black-box, very expressive yet hardly understood by end users.



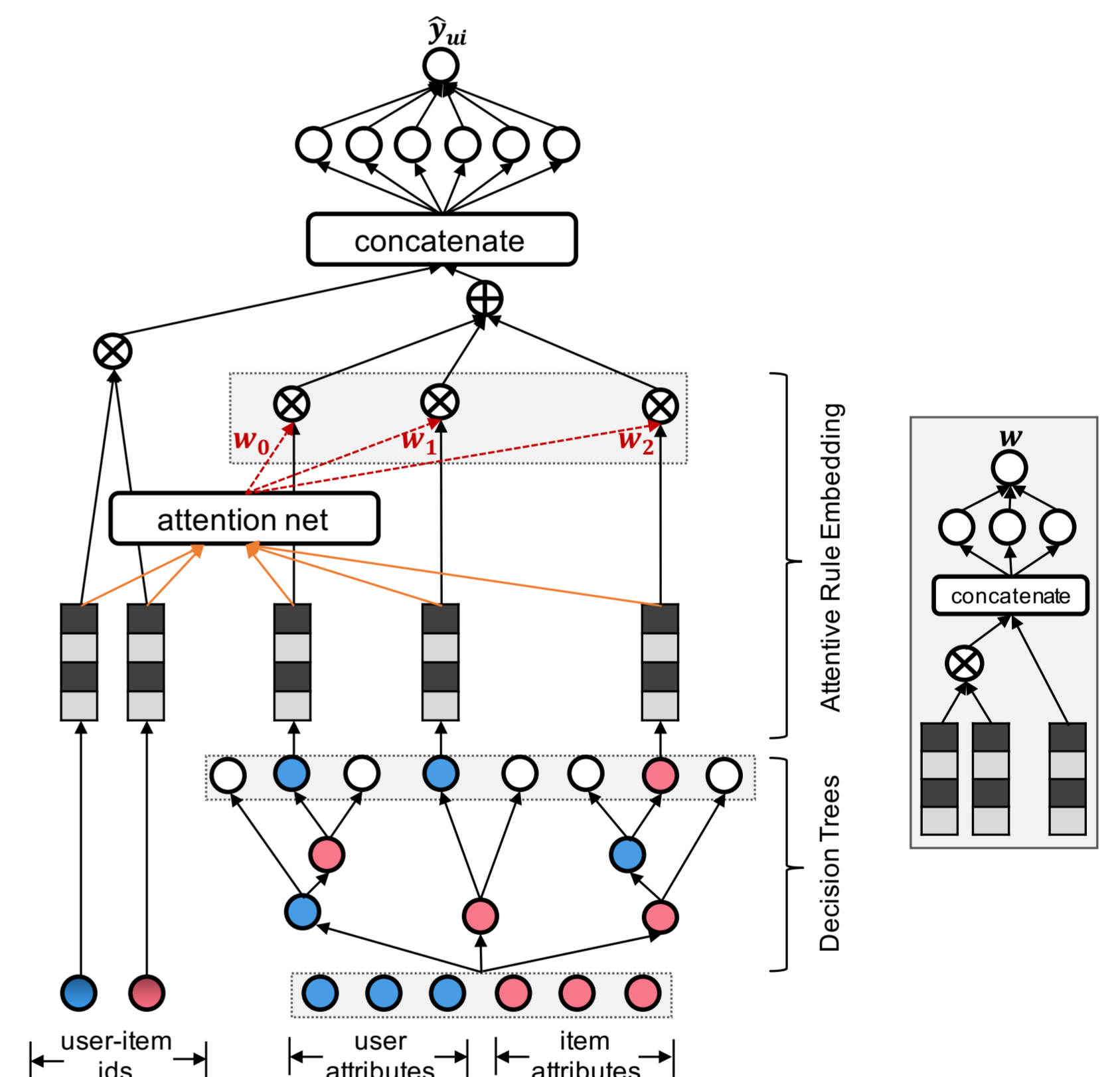
- Promising applications
 - Recommender systems provide sound reasons on why the product is suitable choice.
 - Injecting explainability, recommendations will assist merchants to make informed decisions.

Explainable Recommendation

- We first leverage decision trees to extract several explainable rules.



- We then employ an attention net on user-item & rule interactions.



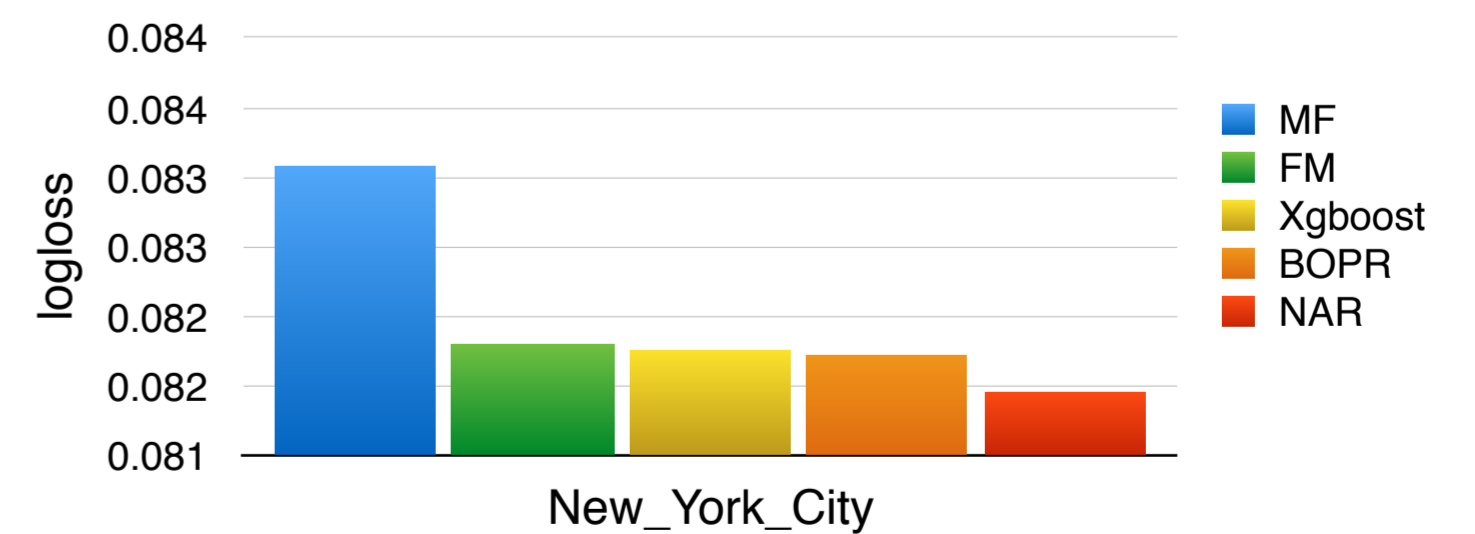
Experimental results

>> Dataset Statistics

- TripAdvisor
- Restaurants from New York City & London & Singapore

City	User#	Item#	User-Item Interaction#
New York City	15,232	6,258	129,964
London	31,860	90,76	301,153
Singapore	5,982	3,914	65,299

>> Restaurant Recommendation



>> Restaurant Recommendation

- <City: Florida, Style: Nightlife Seeker, Age: 50-64> will visit <Per Se>
- <City: SanFrans, Style: Family Travel, Age: 65+> will visit <Gabriel Kreuther>