

# Generate natural language explanations for recommendation.

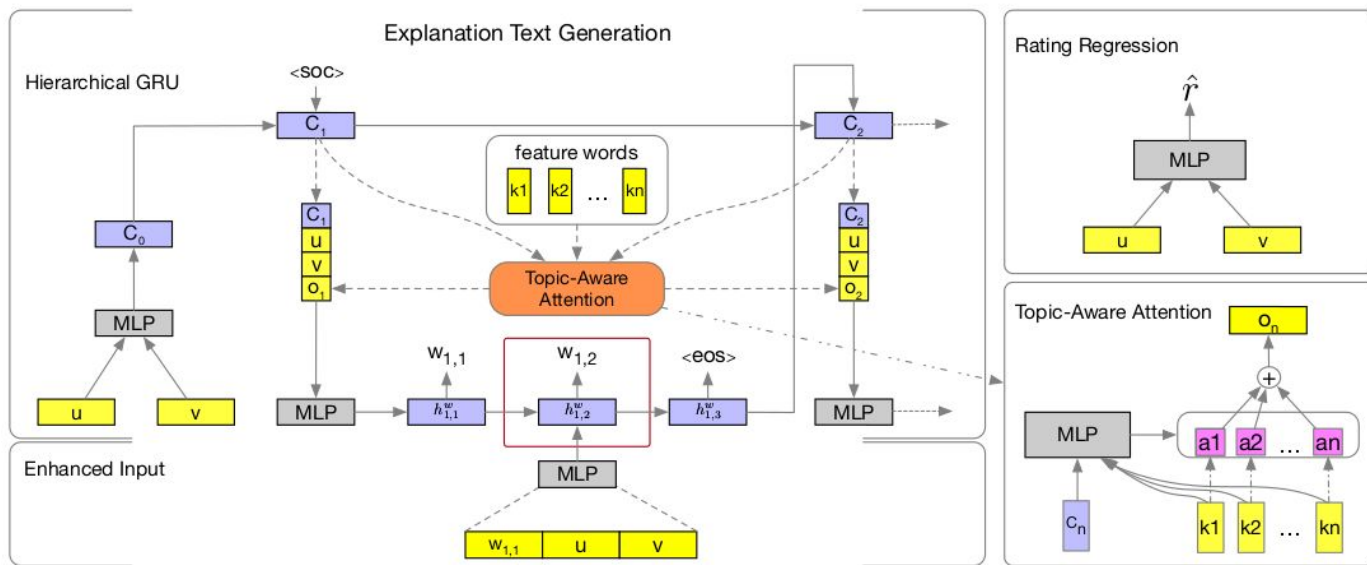
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# Background

- The recommender systems are a major part of internet industry, they provide the users with the personalised item recommendation.
- Though many works have been done in achieving good accuracy in recommendation itself, the explanation for the recommendation has been very limited to template based methods or review retrieval methods
- Template based methods allow very less flexibility in explanation generation and also it is not possible to design templates for all situation.
- Review retrieval methods are limited to only the available reviews and hence can generate sentences extracted directly from all the available reviews which may not be suitable for every situation.

# Technical Details



Overview of our HSS model. There are two major modules—explanation text generation module and rating regression module. The yellow boxes represent latent factors, such as user latent factor  $u$ , item latent factor  $v$ , word vector  $w$ ; blue boxes represent hidden states; gray boxes represent multi-layer perceptron; pink boxes represent the attention weights for each feature word vector.

# Contributions (Novelty)

- In this work, I am re-implementing the paper [Generate natural language explanations for recommendation](#)
- The frame work used is Pytorch, and have implemented from scratch replicating every formulations of the paper.
- There is no official/unofficial code, in any deep learning framework, available for the paper in any online forum I am aware of

# Results & Conclusion

Models	RMSE
BiasedMF	1.030
SVD++	1.034
DeepCoNN	1.028
HSS	1.027
My_model	<b>1.118</b>

Model	BLEU-1
HSS	9.55
My_model	<b>8.49</b>

Good Explanation:	I have thick hair and it takes no time at all to straighten it
Wrong description:	It gives me the perfect winged look for the corner of my eyes