Tourism recommendation system based on semantic clustering and sentiment analysis

Abbasi-Moud, Z., Vahdat-Nejad, H., & Sadri, J. (2021). Tourism recommendation system based on semantic clustering and sentiment analysis. *Expert Systems with Applications*, *167*(114324). https://doi.org/10.1016/j.eswa.2020.114324

https://www.sciencedirect.com/science/article/pii/S0957417420310174#bb0100

- Performed sentiment analysis on tourist attraction reviews using Sentiwordnet 3.0 and validated these results with results from SVM and Bayesian network
- The ratings from reviews and sentiment were used to compute the percentage of positive and negative reviews that a place received
- Then semantic similarity was found using a combination of Wu-Palmer similarity and Extended Gloss Overlaps
- Compared this method with each of these methods on their own
- The Cosine, Jaccard, and hybrid semantic similarity measures were also used find the similarity between the user's preferences and the features of the tourist attractions
- Weather and location were also factored into which attractions were recommended to users
    - Ex: If it was raining indoor locations would be recommended
- The hybrid measures were determined to have performed the best

Hybrid neural recommendation with joint deep representation learning of ratings and reviews

Liu, H., Wang, Y., Peng, Q., Wu, F., Gan, L., Pan, L., & Jiao, P. (2020). Hybrid neural recommendation with joint deep representation learning of ratings and reviews. *Neurocomputing*, *374*, 77–85. https://doi.org/10.1016/j.neucom.2019.09.052

https://www.sciencedirect.com/science/article/pii/S0925231219313207

- Authors used hybrid deep learning model named HRDR to learn from users' ratings and reviews
- Various datasets video games, gourmet food, yelp 2013, yelp 2014
- They built 3 models
    - rating-based encoder
        - Multi Level perceptron was used
        - input=user's rating patterns
    - review-based encoder
        - Convolutional neural network was used to extract the semantic features from words in the reviews
        - The authors then build an attention network to distinguish reviews that would be useful in predicting a user's rating patterns
    - prediction module for recommendation
        - Combined the rating based representations and review based representation to be the final features
        - They used a Latent Feature Model as their prediction layer

        - This would predict the rating that a user would give to an item
- After testing they found that the hybrid model they built effectively improved neural recommendation

Restaurant recommender system based on sentiment analysis

Asani, E., Vahdat-Nejad, H., & Sadri, J. (2021). Restaurant Recommender System based on sentiment analysis. Machine Learning with Applications, 6(100114). https://doi.org/10.1016/j.mlwa.2021.100114

https://www.sciencedirect.com/science/article/pii/S2666827021000578?via%3Dihub

- Authors Elham Asani , Hamed Vahdat-Nejad, and Javad Sadri built a context-aware recommender system based off of a user's food review with 92.8% accuracy.
- The authors used sentiment analysis to gather the user's sentiment on certain foods and used cosine similarity to compare their preferences to the menus of restaurants in their location (Asani et al., 2021).