

LLMRS: Unlocking Potentials of LLM-Based Recommender Systems

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Outline

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- Problem Statement
- □ LLMRS pipeline
- □ Results

Introduction





Problem Statement

- Most of the traditional systems rely on ratings, and suffer from the cold start problem
- LLMs provide an opportunity to capture user preferences and thoughts, however, how to incorporate user reviews into the recommendation system is an open challenge.





Problem Statement



- We wanted to test whether we can integrate pre-trained LLMs to enhance simple-rank based recommender systems
- Pre-trained LLM of choice may affect the recommender systems performance, we tested different LLMs performance on the same query



Dataset



Amazon Product Reviews Dataset



- A large publicly available review dataset
- Widely used for sentiment analysis
- About 17,424 Software Reviews
- Geolocated Reviews

Dataset

Amazon Product Reviews Dataset





Amazon Dataset Reviews and Ratings





Methodology





Methodology (Cont...)





Methodology (Cont...)





Results



- Let's try the result with a query:
 - Query to Baseline Model:"HR program for managing employee records on Windows platform"

Description	Price	Licenc. Fee	Implem Fee	Main. Fee	Avg Rating
staff file perfect solution today manager nee	\$21,780.00	\$0.80	\$10,890.00	\$2,178.00	5.00
orgchart professional delivers world-class org	\$9,999.00	\$0.80	\$4,999.50	\$999.90	5.00
microsoft office small business management edi	\$12,990.00	\$0.80	\$6,495.00	\$1,299.00	5.00
the right tool job . write format audit resu	\$3,995.00	\$0.80	\$1,997.50	\$399.50	4.07
anytime organizer every tool need or	\$3,999.00	\$0.80	\$1,999.50	\$399.90	3.56

Result



- Let's try the result with a query:
 - Query to LLMRS: "HR program for managing employee records on Windows platform"

Description	Price	Licenc. Fee	Implem Fee	Main. Fee	Rank Score
anytime organizer every tool need or	\$3,999.00	\$0.80	\$1,999.50	\$399.90	591.79
the right tool job . write format audit resu	\$3,995.00	\$0.80	\$1,997.50	\$399.50	153.97
winway resume deluxe includes new 8220 save	\$1,999.00	\$0.80	\$999.50	\$199.90	99.81
microsoft office small business management edi	\$12,990.00	\$0.80	\$6,495.00	\$1,299.00	11.82
anytime organizer every tool need organize p	\$1.00	\$0.00	\$0.50	\$0.10	2.43

Summary







2. Developed a zero-shot pipeline LLMRS



3. Evaluated various pre-trained LLMs using LLMRS

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Thank You for Your Attention

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