Text2Playlist
Generating Personalized Playlists from Text on Deezer

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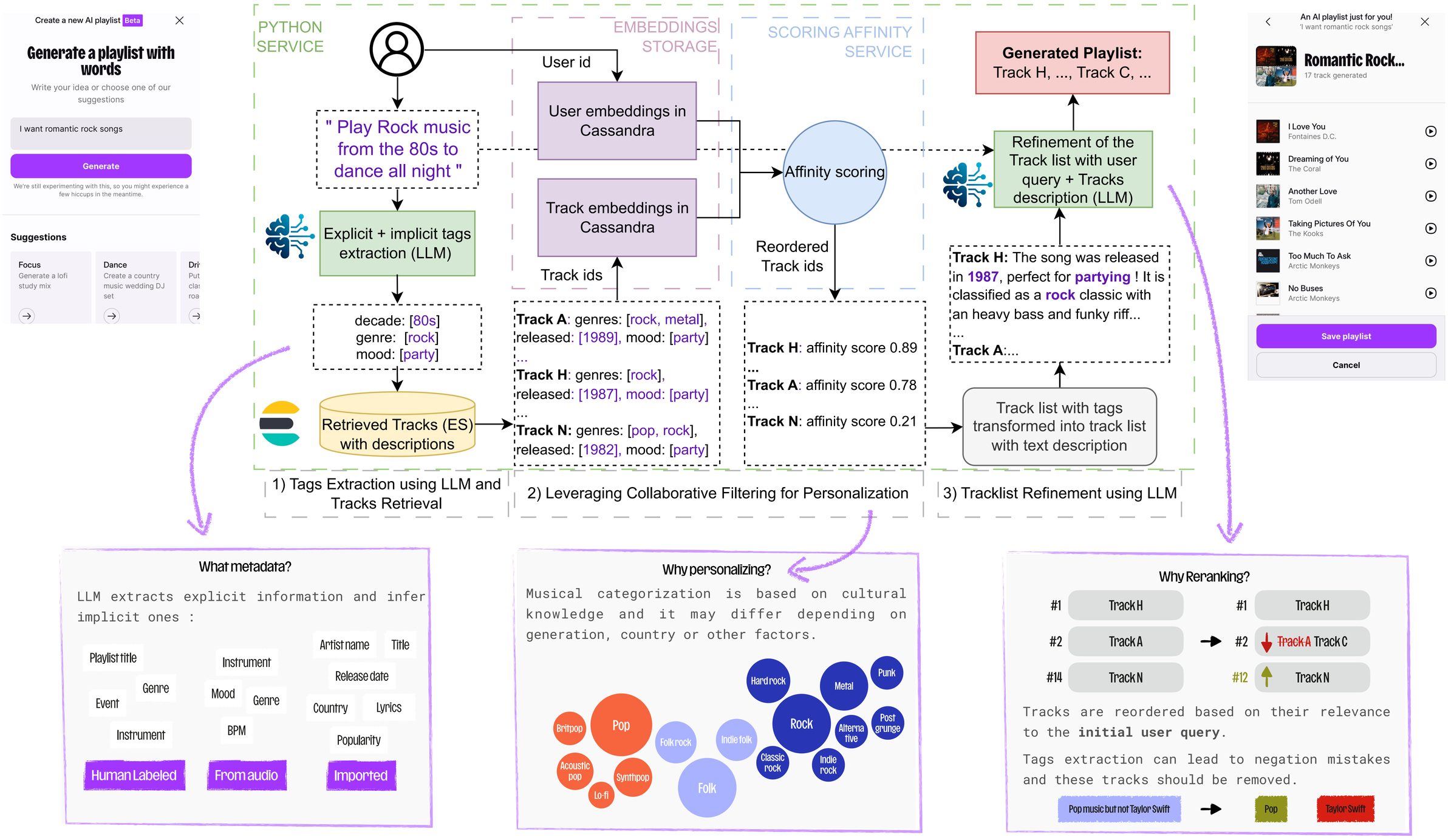
Abstract

- The streaming service Deezer heavily relies on the search to help users navigate through its extensive music catalog. Nonetheless, it is primarily designed to find specific items and does not lead directly to a smooth listening experience.
- We present **Text2Playlist**, a stand-alone tool that addresses these limitations. Text2Playlist leverages generative AI, music information retrieval and recommendation systems to generate query-specific and personalized playlists, successfully deployed at scale.

Keywords

generative AI
music information retrieval
real world deployment



What metadata?

LLM extracts explicit information and infer implicit ones :

Why personalizing?

Musical categorization is based on cultural knowledge and it may differ depending on generation, country or other factors.

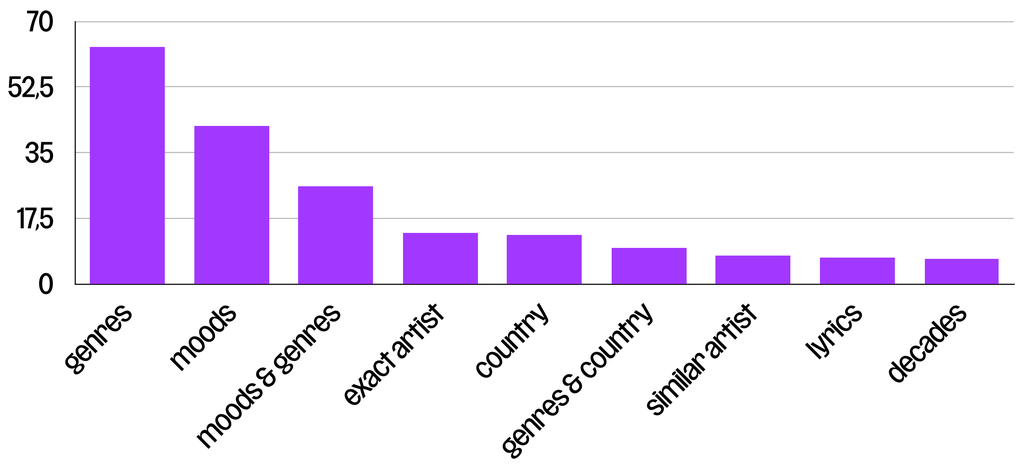
Why Reranking?

Tracks are reordered based on their relevance to the **initial user query**.

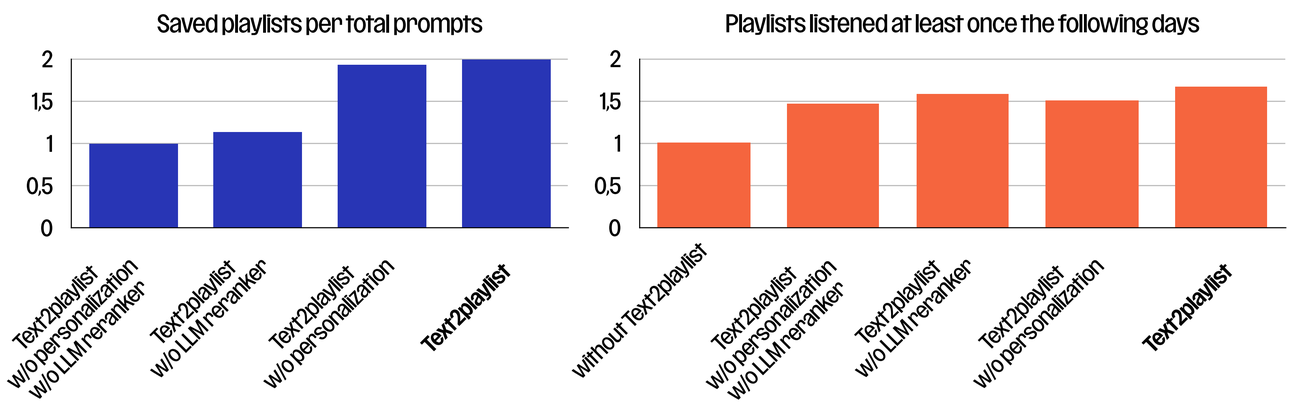
Tags extraction can lead to negation mistakes and these tracks should be removed.

Results

Percentage of user queries specifying each category



Relative usage rate of the Text2Playlist tool for different versions (5% users for each version)



Query analysis

- User queries are biased towards genres (63%) and moods (42%)
- The user intent is concentrated on content-related features rather than metadata.

Deployment analysis

- Text2Playlist doubles the probability that a generated playlist is saved compared to baseline.
- Users will have more chances to save the generated playlist if it's personalized (+93%).
- Playlists made with Text2Playlist are more likely to be listened to.

Takeaway

- **Text2Playlist** extracts tags from user text with an LLM, retrieves candidate tracks from metadata, and ranks them with collaborative filtering and refinement.
- Incorporating personalization and a list-wise reranker significantly improves playlist creation performance.
- The system is deployed on Deezer, reaching up to 20% of premium users.
- Engagement is strong: 45% of AI-generated playlists are replayed, compared to 27% of user-created playlists.
- Analysis of usage shows that most user requests center around genres and moods, like "Chill" and "Party."

Future work

- Replace heavy LLM components with lighter models now that we analyzed real data and gathered knowledge on the tool's usage.
- Conversational search to allow users to refine their queries for improved efficiency.

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https://github.com/deezer/text2playlist-recsys2025