

[Diary-based Music Recommendation]

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Research Motivations

Recently, people have shown increasing interest in recording their emotions through diaries and reflecting on their daily feelings.

There is also growing demand for music that aligns with one's emotional state.

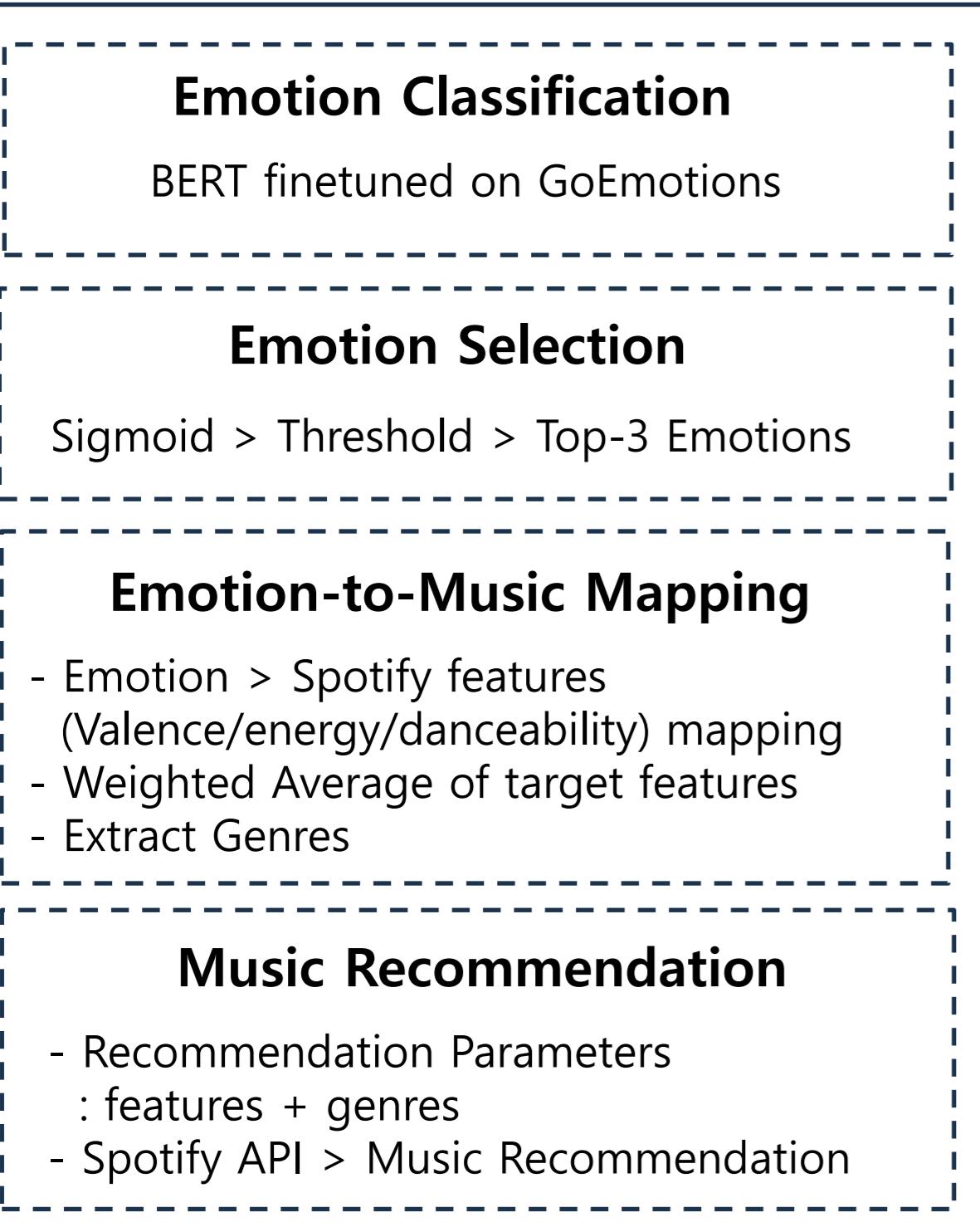
However, most music services still focus on past listening patterns and do not reflect how the user feels on a particular day.

Existing emotion-based tools also tend to rely on simple, preset choices rather than interpreting the user's own writing.

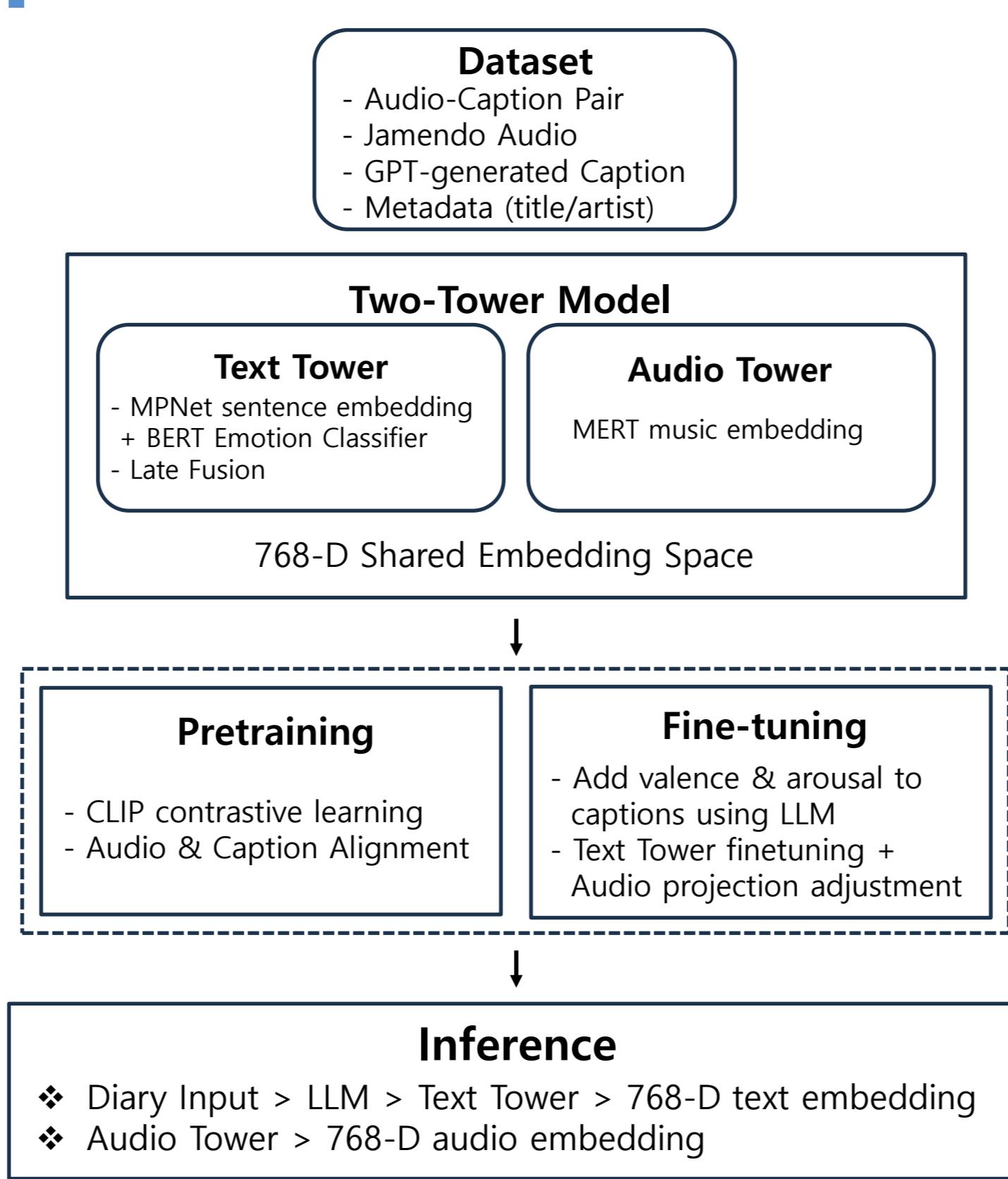
For these reasons, we aim to build a system that **reads a diary entry** and **recommends music** that naturally matches the user's emotional state.

Model Architecture

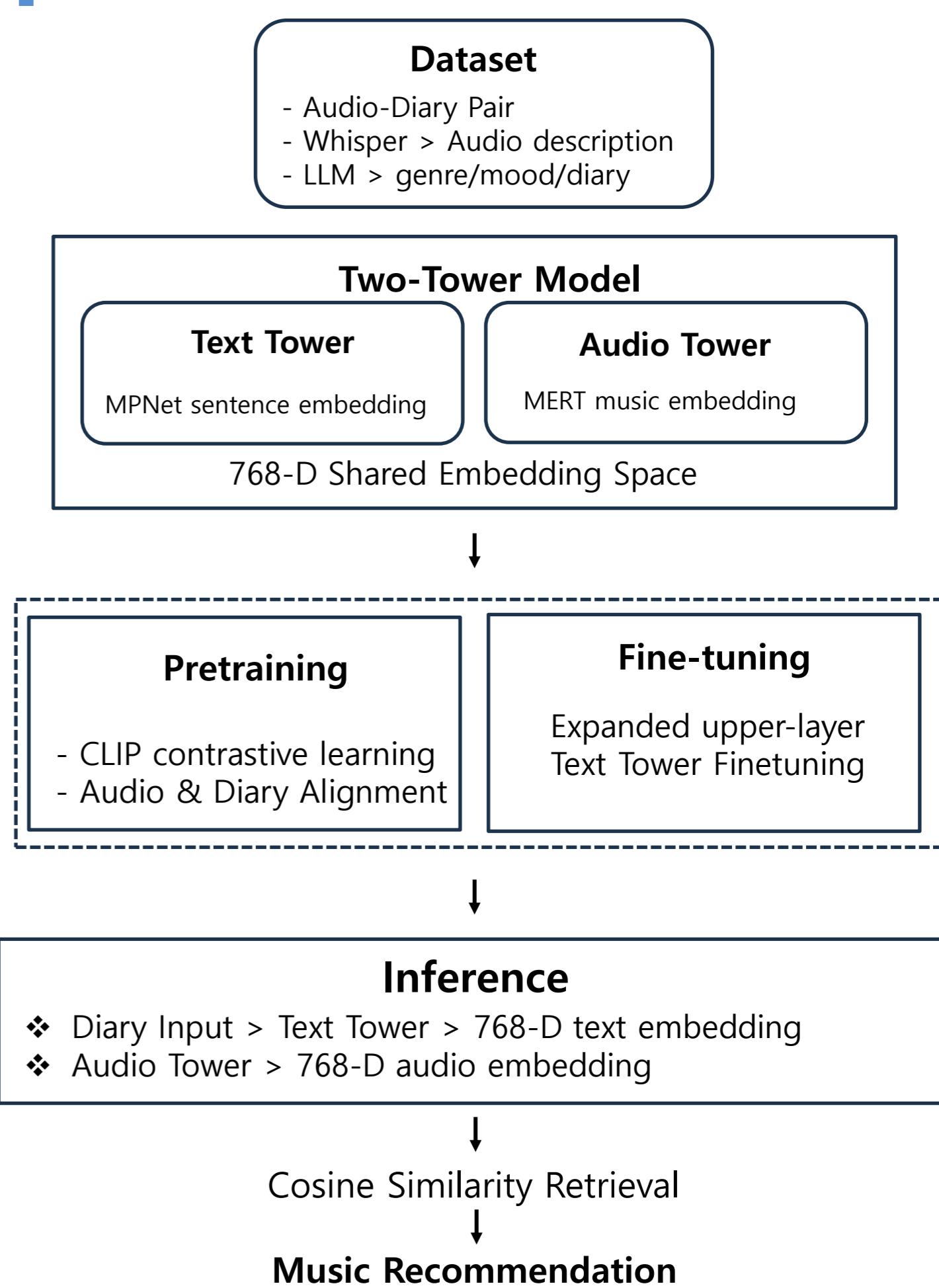
Emotion-to-Music Mapping



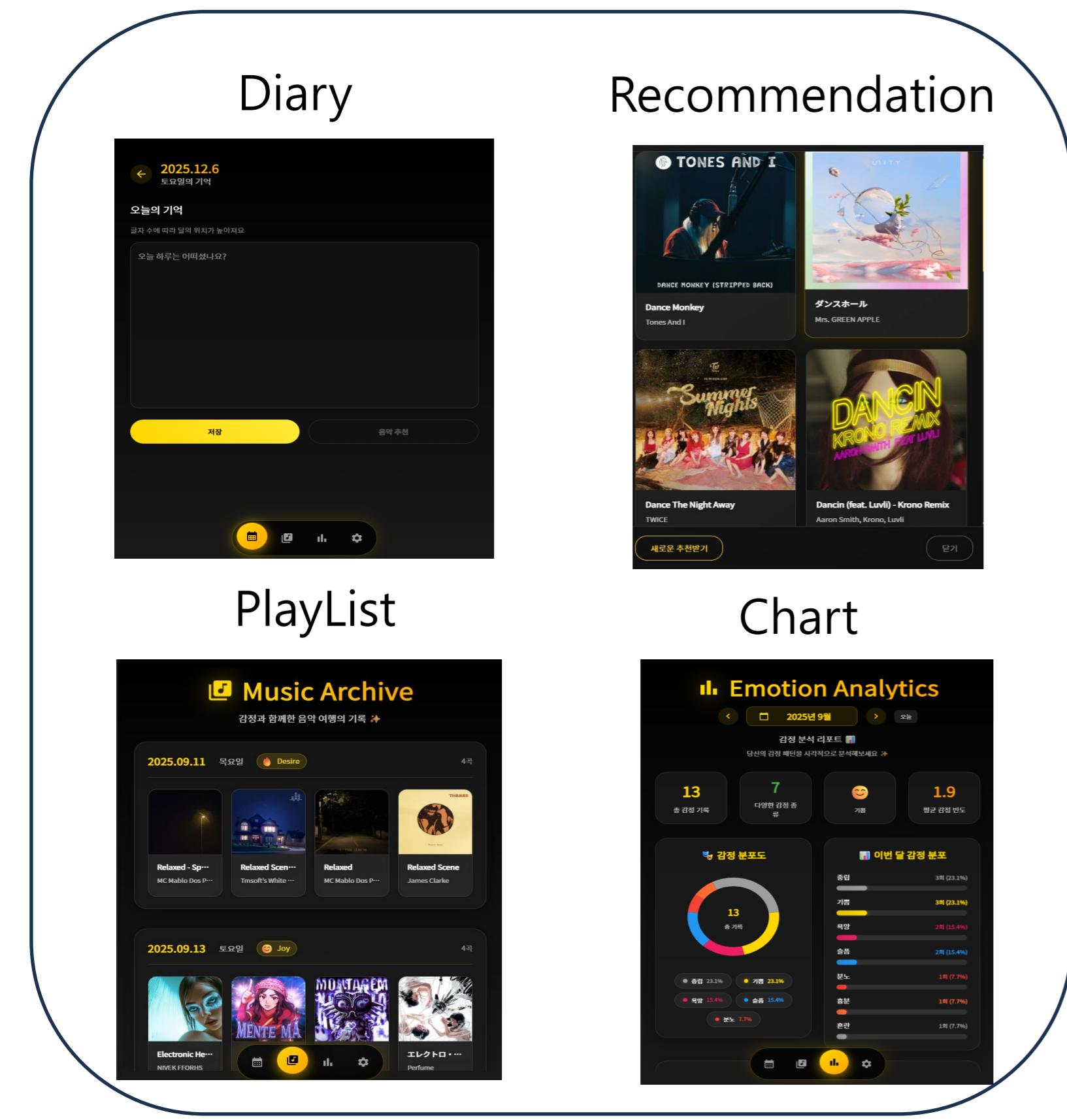
Audio-Caption Dual Tower



Audio-Diary Dual Tower



Pipeline



Model Results

Model2	Pretrained	Pretrain + Fine-Tuning
Positive	0.592	0.512
Negative	0.648	0.617
Neutral	0.546	0.483
Mixed	0.576	0.574

Model1	Micro-F1	Macro-F1
BERT	0.93	0.88

Model3	Pretrained	Pretrain + Fine-Tuning
Positive	0.541	0.549
Negative	0.666	0.715
Neutral	0.574	0.593
Mixed	0.606	0.629

User Study

* We conducted User Study of 20 participants.

	Model1	Model2	Model3
Average Ranking	2.6	2.1	1.3
Satisfaction(~5)	3.9	4.3	4.7

Based on a user study with 20 participants, **they were mostly satisfied with Model 3**. Many participants commented that, for Model 1, the recommended songs felt similar when the input diaries had similar emotions. This result is consistent with the similarity scores in our quantitative evaluation.

Future Work

- We aim to enhance personalization by learning user-specific emotion patterns and music preferences.
- Positive & Neutral diaries use more generic descriptions, which leads to lower similarity for these emotions. We could further improve recommendation similarity by balancing the dataset across emotion categories.