

# Designing a Human-Centered Movie Search System with Explainable AI

You

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## 1 Introduction

This project presents a movie recommendation system that leverages semantic search and GigaChat API to generate personalized explanations for recommendations. The interface incorporates accessibility features and modern UI principles, supporting both dark mode and a high-contrast mode for visually impaired users. The project aims to reflect Human-AI Interaction Design (HAIID) principles to deliver a user-centric and inclusive AI experience.

## 2 Design Choices and Justification

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### 2.1 Design Choices and Justification

The design of the system is grounded in several key principles of human-centered AI:

**Semantic Search with Sentence Transformers:** Instead of keyword-based search, we implemented semantic vector search using Sentence Transformers. This aligns with [Don Norman's](#) principle of “match between system and the real world”, allowing users to express their movie desires naturally, rather than in rigid query syntax.

**Explainability through GigaChat API:** Personalized textual explanations are generated for each recommended film. This follows Shneiderman's guideline [2] for trustworthy AI (Shneiderman, 2020), as users are more likely to trust and engage with a system that can justify its outputs in human-readable language.

**Mixed-Initiative Interaction:** The interface offers both a free text input and a set of curated starting prompts. This mirrors Horvitz's [1] idea of mixed-initiative UI, enabling users to either take control or follow the system's guidance, depending on their preference.

**UI/UX Design Principles:** We followed People + AI Guidebook and [Apple's HIG](#) recommendations, such as using progressive disclosure (“Show More” button), clear hierarchy of information, and responsive layout. These design decisions enhance predictability, control, and discoverability in interaction.

**Accessibility Features:** Implementing a high-contrast mode and larger fonts addresses principles of inclusive design, ensuring that users with different abilities can benefit equally.

## 3 Application of HAIID Principles

### 3.1 User-Centered Design

We applied the user-centered design process, conducting informal feedback sessions to iterate on the interface. Early versions lacked adequate explanation transparency and visual clarity, which were

addressed based on user suggestions. The goal was to align with [Norman’s principle](#) of “visibility of system status” and “user control and freedom.”

## 3.2 Explainability and Transparency

The system does not function as a black box. It tells users why a movie is recommended, using text generated by the GigaChat API that references features from the user’s query and the movie (e.g., tone, theme, genre). This adheres to XAI[3] usability principles, promoting user understanding and reducing frustration.

## 3.3 Mixed-Initiative Interaction

Horvitz’s principles of mixed-initiative interaction were implemented by balancing automation (recommendations) with human input (free-text queries). We made sure users could always override system suggestions, a safeguard mentioned by Lubars and Tan [5] when discussing task delegability.

# 4 Lessons Learned

**Semantic Interfaces Improve Engagement:** Users appreciated being able to describe the kind of movie they wanted in free-form language. This validates the importance of natural language interfaces in human-centered AI [4].

**Explanations Drive Trust:** The inclusion of natural language explanations significantly increased user trust, echoing results found in XAI[3] studies. However, fine-tuning responses to be more factual and less vague remains a challenge.

**Accessibility Cannot Be an Afterthought:** Including features for visually impaired users from the start made it easier to maintain consistency and usability. This experience reinforced the importance of inclusive design from day one.

**Human-AI Symbiosis is Key:** The system works best when users co-create meaning with it—typing their own queries, evaluating explanations. This reflects Licklider’s vision of man-computer symbiosis: a partnership, not automation.

## 4.1 Future Work

To improve, we aim to:

- Add multilingual support, improving inclusivity for non-English speakers.

- Implement user profiling for more personalized recommendations while respecting privacy.

- Integrate evaluation dashboards to measure user trust, satisfaction, and explanation helpfulness.

# 5 Conclusion

This project showcases how the principles of Human-AI Interaction Design can be embedded into a real-world system. By focusing on transparency, user agency, accessibility, and iterative feedback, the Movie Recommendation System aligns with the vision of ethical, effective, and human-centered AI. While challenges remain—particularly in bias mitigation and deeper personalization—the design choices made here demonstrate how theoretical HAIID concepts translate into practical, impactful design.

## References

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