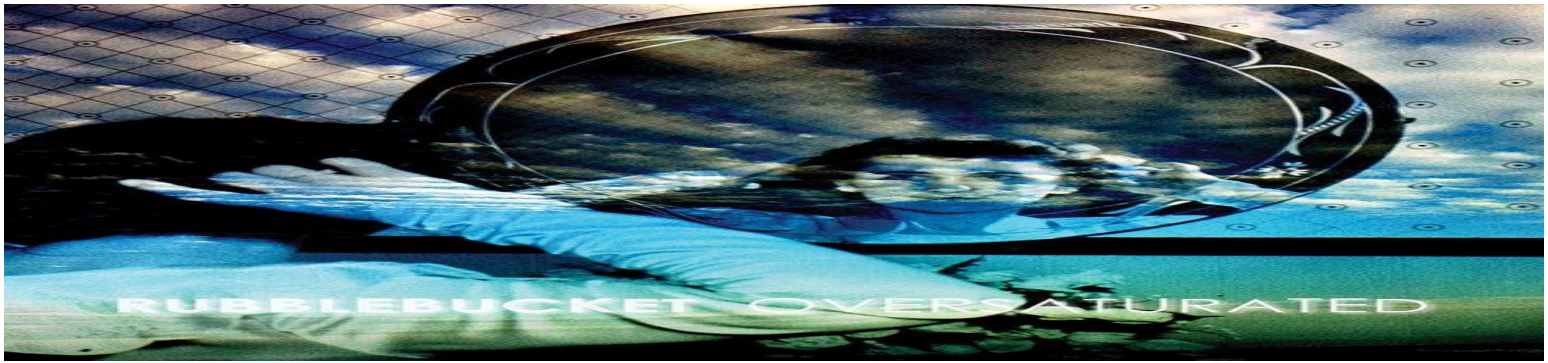
Live Presentation

Music Recommendation Systems

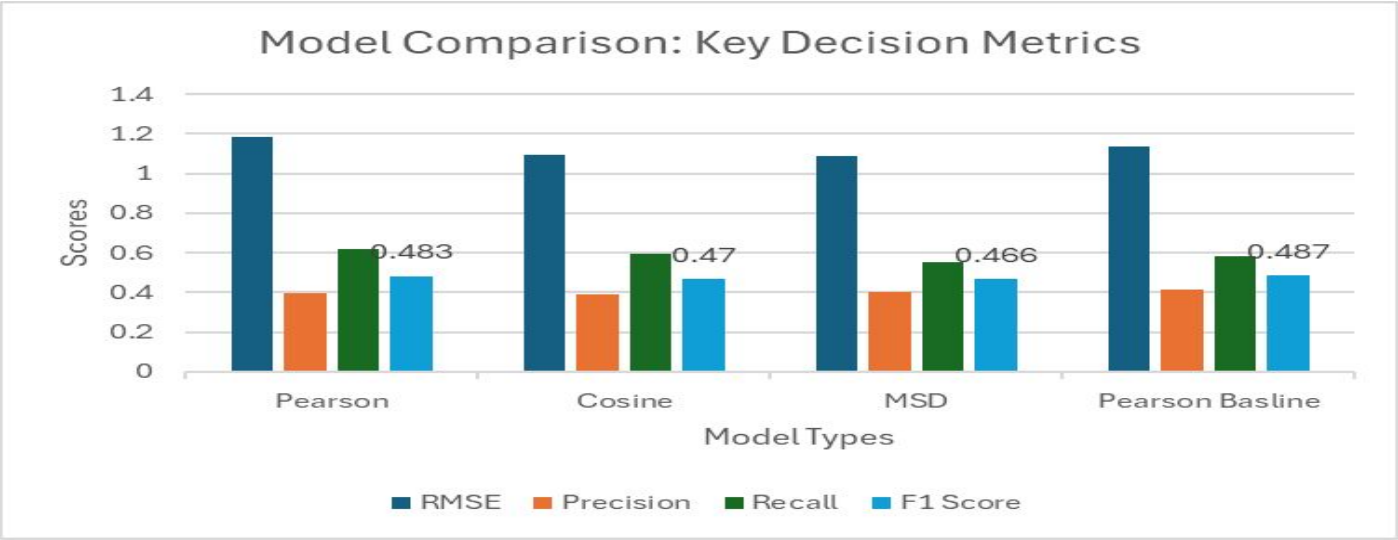
Executive Summary

- Streaming services face challenges due to explosive growth in content.
- Annual music releases have increased nearly fivefold in two decades.
- KNNBasic user-user collaborative filtering model is proposed as a solution.



The Models Answer

- The model excels at identifying songs aligned with user preferences.
- It balances familiarity with discovery in recommendations.
- The model has high performance in identifying relevant songs based on play counts.
- The chosen Pearson Baseline model has a superior F1 score of 0.487.



User-User Collaborative Filtering

- This approach leverages the wisdom of similar users, providing personalized recommendations.
- It's particularly effective in a music context where tastes can be highly individual.
- By considering both popular songs and personal preferences, we cater to users' desires to stay current while also discovering new favorites.

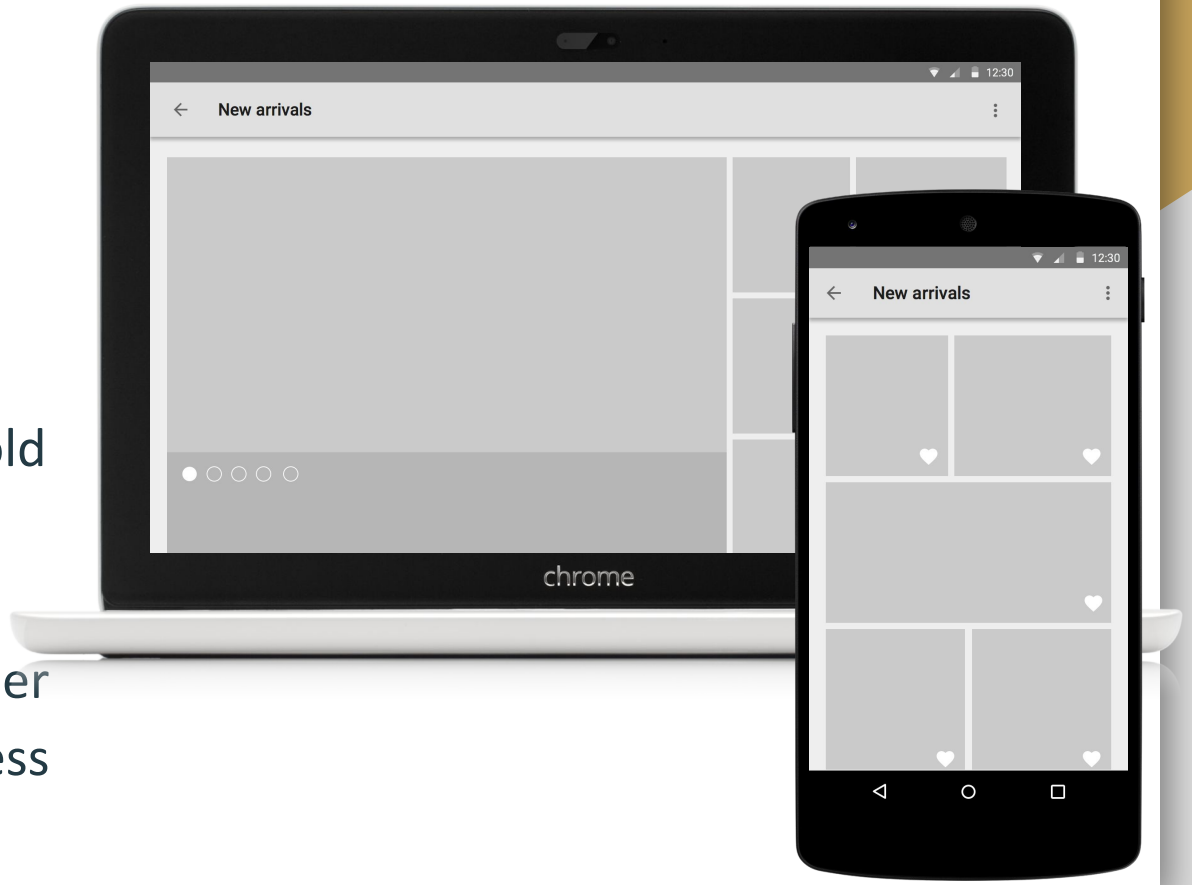
- By incorporating some popularity-based recommendations, we can provide reasonable suggestions even for new users or new songs.
- It can uncover hidden gems, encouraging users to explore new music.
- The model can adjust to seasonal trends and yearly patterns in music consumption
- The approach can transform casual listeners into highly engaged "super users"

why?????

- Explosive Growth: Since 1990, the music industry has seen a dramatic increase in annual releases, growing from about 8,000 to 38,000 over a 20-year period.
- Quality Concerns: This rapid expansion of available music raises questions about the overall quality of content being produced in such large quantities.
- Need for Recommendations: The massive increase in music content underscores the crucial importance of robust recommendation systems in today's oversaturated music landscape.

Thanks Bud,

- It creates a positive feedback loop as users interact with recommendations.
- The system addresses cold start problems for new users.
- The solution balances user engagement with business objectives.



Users struggle to discover new music they enjoy while revisiting favorites.

The key challenge is keeping users engaged and subscribed.

Execution

- **The rollout includes A/B testing and gradual expansion to different user segments.**
- **Robust user feedback integration and personalization options are recommended.**
- **Key performance indicators will focus on user engagement and retention**

Stakeholders

- IT infrastructure scaling is necessary to handle increased data processing demands.
- UX designers should focus on creating intuitive interfaces for user interaction.
- The system is expected to transform user experience and reduce churn.

Cost

- NVIDIA GPUs are recommended for the recommendation system's processing needs.
- Estimated costs for GPU hardware range from $200,000 to $750,000.
- AWS hosting for 2 million users could cost approximately $97,015 per month.

Final Take!

- A comprehensive demographic analysis is recommended to optimize performance.
- The system can be fine-tuned to better serve underperformed segments.
- The project aims to optimize system performance and enhance user satisfaction across all segments.