Columbia University

REAL TIME PODCAST TRANSLATING, TRANSCRIBING, AND RECOMMENDATION SYSTEM

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PROBLEM



There is an imbalance of languages in educational podcasts

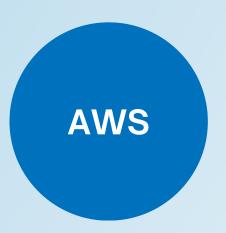


SOLUTION

Cloud based system for translation of podcasts.

Enable users to share and explore podcasts through a recommendation system.

TECHNOLOGY



Machine learning advancements to ensure high-quality translations.

Robust AWS infrastructure for scalability and efficiency.



ARCHITECTURE OVERVIEW

FRONTEND

Account creation, file
uploads, and metadata
input. It handles user
authentication, audio file
storage, and provides access
to uploaded and
recommended podcasts.

USER SERVICES

Managing user interactions, this service oversees account authentication, file metadata retrieval, and storage in DynamoDB.

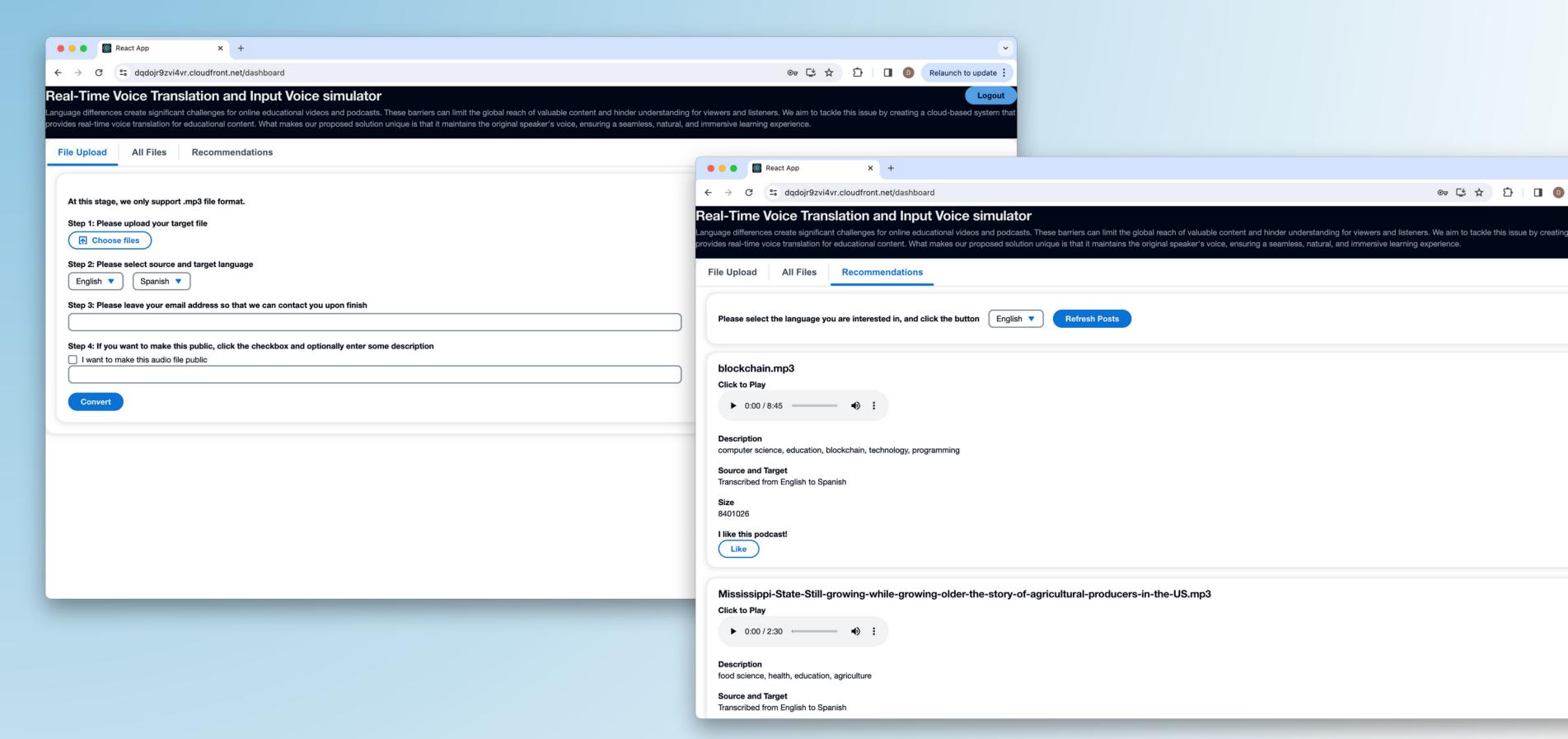
AUDIO SERVICES

Automated audio file processing initiates upon user uploads. It involves transcription via Amazon Transcribe, translation using Amazon Translate, and custom voice generation with Amazon Polly.

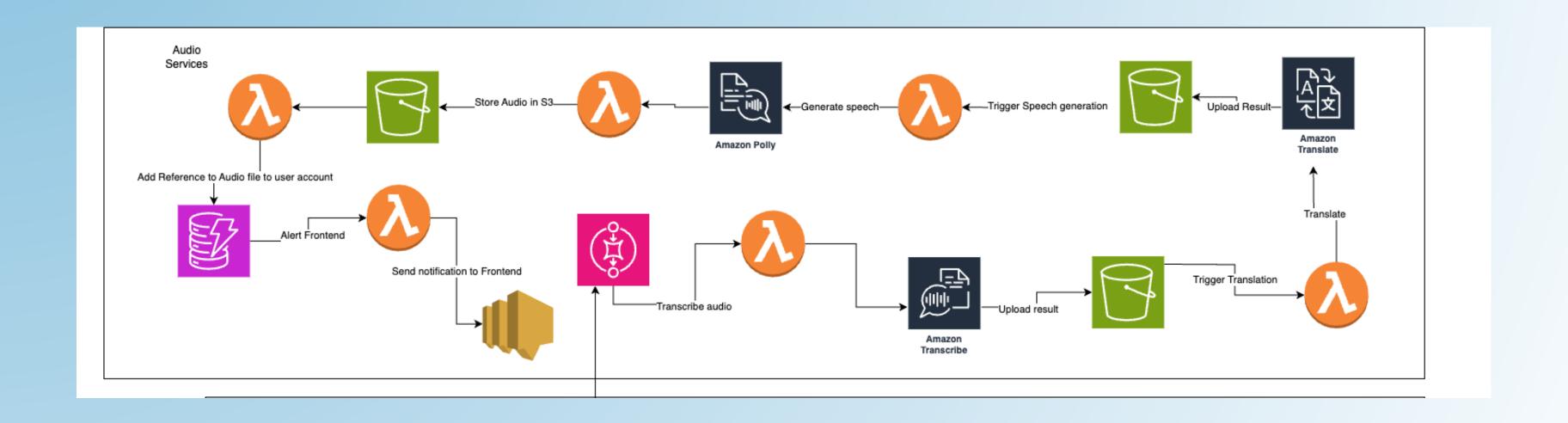
RECOMMENDATION SERVICES

Updates user preferences and manages personalized recommendations, enhancing content discoverability.

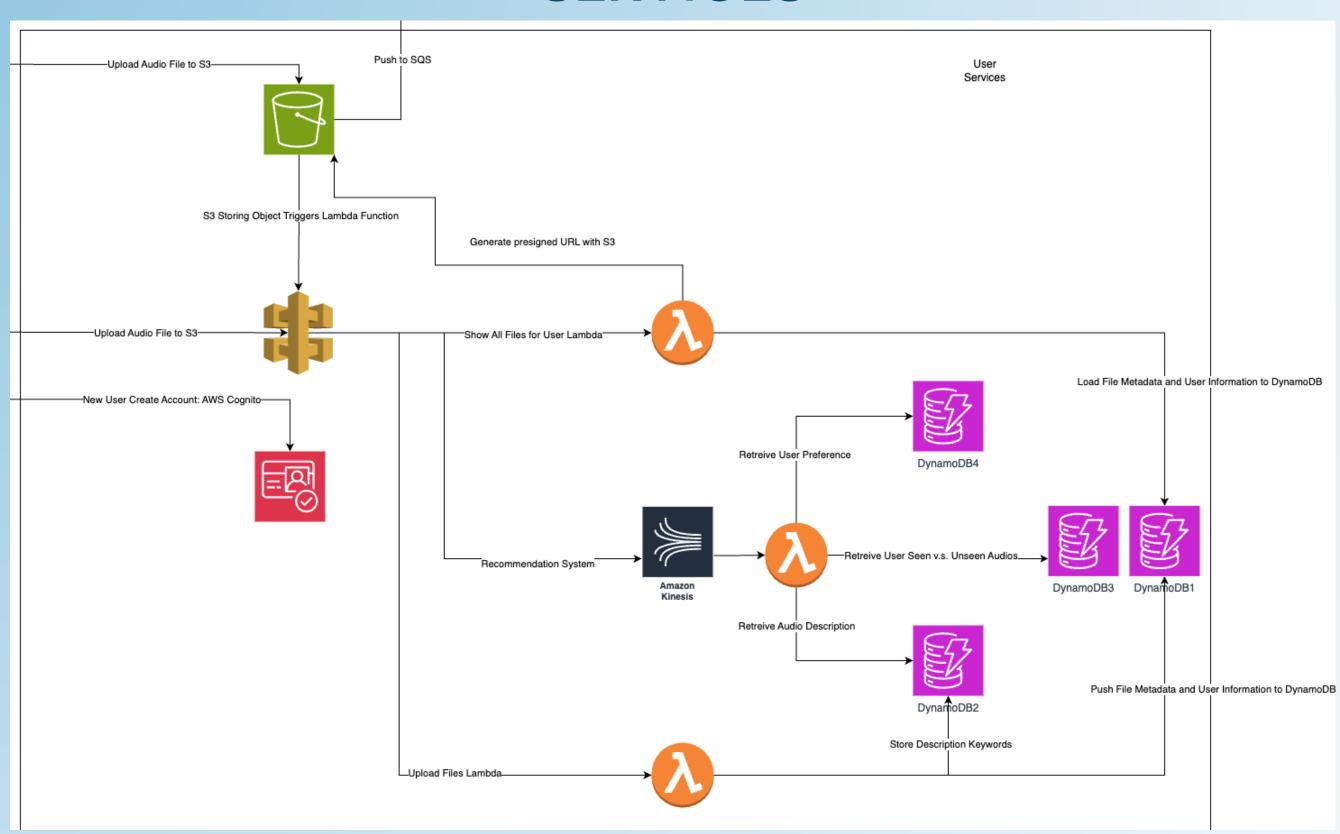
FRONTEND



AUDIO SERVICES



USER AND RECOMMENDATION SERVICES



CONCLUSION

- Successful Implementation: The system has successfully demonstrated audio processing, user interaction, and recommendation services leveraging AWS infrastructure.
- Enhanced User Experience: Users can transcribe, translate, and generate custom voice audio, empowering language diversity in podcasts.
- Scalability and Reliability: Utilizing AWS services
 ensured scalability and reliability during processing,
 ensuring a consistent user experience.

FUTURE IMPROVEMENTS

- Enhanced Recommendation Algorithms: Implement more advanced recommendation algorithms to provide more accurate and personalized content suggestions.
- Real-time Collaboration: Enable real-time collaboration features, allowing users to collaborate on audio projects or share real-time translations.