GENERATIVE AI

Problem Statement 1:

Personalized Podcast Generator Using Generative AI

The rapid growth of podcast content has created a diverse and ever-expanding media landscape. With millions of episodes available across various topics and genres, users are often overwhelmed by the vast choices. A personalized podcast generator aims to address this problem by utilizing generative AI to create podcasts that cater to the individual preferences, needs, and interests of listeners. Design a system capable of generating high-quality, engaging, and contextually relevant podcasts that are personalized in real-time, ensuring a unique listening experience for each user.

Features

- Data Collection and User Profiling: Build a dynamic user profile that evolves over time as the system learns more about the user's preferences and real-time context by accurately capturing user's interests, favourite genres, topics, podcast length preferences, preferred tone/style (e.g., casual, informative, entertaining), listening habits listening history, and preferences, user's contextual data such as his location, mood and activity. You can also take into account current events, news, trending topics, social media content, and geographical events to ensure relevance to the user's moment.
- Build AI/ML/DL model for content curation and content creation and Generate Contextually Relevant Content. Use the user data to generate engaging podcast episodes on-demand, ensuring the content is highly relevant and personalized. Generate a new script based on current events, trending topics, or user interests. The system might pull from diverse data sources like news, blogs, academic papers, and podcasts to create a personalized narrative

- Create High-Quality Audio Content: Ensure the generated podcast has high-quality narration, seamless transitions, and smooth delivery, resembling a professional, human-hosted podcast. Allow users to select preferred voice styles (e.g. male, female, accent, pitch and tone etc.). Emotion detection models can be implemented to adjust the vocal tone according to the subject matter (e.g., cheerful for light topics, serious for important news
- Adapt and Learn Over Time: Continuously refine and adapt to changing user preferences, evolving interests, and contextual factors. Also ensure that the generated podcast remains coherent throughout the episode, maintaining logical flow, appropriate tone, and content consistency.
- Ethical and Practical Concerns: Address challenges around content bias, privacy issues, and misinformation, ensuring that the AI-generated podcast adheres to ethical standards and does not inadvertently spread misleading content or reinforce harmful stereotypes.

Deep Learning Techniques

- Personalized Podcast Recommendations with RNNs & Transformers – Uses deep learning models like RNNs, Transformers, and Collaborative Filtering to analyze user preferences and listening patterns over time.
- Reinforcement Learning for Adaptive Content Curation – Adjusts podcast recommendations dynamically based on user interactions (e.g., skips, pauses) to continuously optimize content suggestions.
- AI-Generated Podcast Content with GPT-4 & BERT – Utilizes state-of-the-art NLP models to generate engaging and relevant podcast scripts tailored to user interests.
- Topic Modeling & Contextual Adaptation – Applies techniques like LDA and Transformer-based models to identify trending topics and align generated content with real-time events and user preferences.
- Real-Time Feedback Integration & Dynamic Adjustments – Continuously refines podcast content and recommendations using explicit user ratings and implicit behavioural cues, ensuring a highly personalized listening experience.