

# Conversation Audio Generation

Prompt:

make at least 100 rounds conversation cover all details about this PDF, give me json format about this PDF.

```
[
  {
    "speaker": "A",
    "line": "Hey, I've been hearing a lot about Machine Learning (ML), Deep Learning (DL), and GPT lately.",
  },
  {
    "speaker": "B",
    "line": "Sure! Let's start with the basics. Machine Learning is a field of computer science where systems learn from data without being explicitly programmed.",
  }
]
```

Code:

```
import os
import json
import random
import subprocess
from google.cloud import texttospeech
import tempfile
import time
import argparse

# Fixed output directory for conversations
OUTPUT_DIRECTORY = "assets/conversations"
INPUT_DIRECTORY = "scripts/conversation"

def text_to_speech(text, output_filename, voice_name=None):
    print(f"Generating audio for: {output_filename}")
    try:
        client = texttospeech.TextToSpeechClient()
        synthesis_input = texttospeech.SynthesisInput(text=text)
        if not voice_name:
            voice_name = random.choice(["en-US-Journey-D", "en-US-Journey-F", "en-US-Journey-O"])
        voice = texttospeech.VoiceSelectionParams(language_code="en-US", name=voice_name)
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audio_config = texttospeech.AudioConfig(
    audio_encoding=texttospeech.AudioEncoding.MP3,
    effects_profile_id=["small-bluetooth-speaker-class-device"]
)

retries = 5
for attempt in range(1, retries + 1):
    try:
        response = client.synthesize_speech(input=synthesis_input, voice=voice, audio_config=audio_config)
        with open(output_filename, 'wb') as out:
            out.write(response.audio_content)
        print(f"Audio content written to {output_filename}")
        return True
    except Exception as e:
        print(f"Error on attempt {attempt}: {e}")
        if attempt == retries:
            print(f"Failed to generate audio after {retries} attempts.")
            return False
        wait_time = 2 ** attempt
        print(f"Retrying in {wait_time} seconds...")
        time.sleep(wait_time)
except Exception as e:
    print(f"An error occurred while generating audio for {output_filename}: {e}")
    return False

def process_conversation(filename):
    filepath = os.path.join(INPUT_DIRECTORY, filename)
    output_filename = os.path.join(OUTPUT_DIRECTORY, os.path.splitext(filename)[0] + ".mp3")

    if os.path.exists(output_filename):
        print(f"Audio file already exists: {output_filename}")
        return

    try:
        with open(filepath, 'r', encoding='utf-8') as f:
            conversation = json.load(f)
    except Exception as e:
        print(f"Error loading conversation file {filename}: {e}")
        return

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temp_files = []

voice_name_A = random.choice(["en-US-Wavenet-D", "en-US-Wavenet-E", "en-US-Wavenet-F"])
voice_name_B = random.choice(["en-US-Studio-O", "en-US-Studio-M", "en-US-Studio-Q"])

for idx, line_data in enumerate(conversation):
    speaker = line_data.get("speaker")
    line = line_data.get("line")
    if not line:
        continue
    temp_file = os.path.join(OUTPUT_DIRECTORY, f"temp_{idx}.mp3")
    temp_files.append(temp_file)

    voice_name = None
    if speaker == "A":
        voice_name = voice_name_A
    elif speaker == "B":
        voice_name = voice_name_B

    if not text_to_speech(line, temp_file, voice_name=voice_name):
        print(f"Failed to generate audio for line {idx+1} of {filename}")
        # Clean up temp files
        for temp_file_to_remove in temp_files:
            if os.path.exists(temp_file_to_remove):
                os.remove(temp_file_to_remove)
        return

if not temp_files:
    print(f"No audio generated for {filename}")
    return

# Concatenate using ffmpeg
concat_file = os.path.join(OUTPUT_DIRECTORY, "concat.txt")
with open(concat_file, 'w') as f:
    for temp_file in temp_files:
        f.write(f"file '{os.path.abspath(temp_file)}'\n")

try:
    subprocess.run(
        ['ffmpeg', '-f', 'concat', '-safe', '0', '-i', concat_file, '-c', 'copy', output_filename],

```

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        check=True,
        capture_output=True
    )

    print(f"Successfully concatenated audio to {output_filename}")
except subprocess.CalledProcessError as e:
    print(f"Error concatenating audio: {e.stderr.decode()}")
finally:
    os.remove(concat_file)
    for temp_file in temp_files:
        os.remove(temp_file)

if __name__ == "__main__":
    parser = argparse.ArgumentParser(description="Process conversation JSON files to generate audio.")
    args = parser.parse_args()

    os.makedirs(OUTPUT_DIRECTORY, exist_ok=True)

    for filename in os.listdir(INPUT_DIRECTORY):
        if filename.endswith(".json"):
            process_conversation(filename)

```