

```
#setup environment in google colab
```

```
!pip install elevenlabs gradio
```

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Requirement already satisfied: httpx>=0.21.2 in /usr/local/lib/python3.11/dist-packages (from elevenlabs) (0.28.1)
Requirement already satisfied: pydantic>=1.9.2 in /usr/local/lib/python3.11/dist-packages (from elevenlabs) (2.11.7)
Requirement already satisfied: pydantic-core<3.0.0,>=2.18.2 in /usr/local/lib/python3.11/dist-packages (from elevenlabs) (2.33.2)
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Requirement already satisfied: typing_extensions>=4.0.0 in /usr/local/lib/python3.11/dist-packages (from elevenlabs) (4.14.1)
Requirement already satisfied: websockets>=11.0 in /usr/local/lib/python3.11/dist-packages (from elevenlabs) (15.0.1)
Requirement already satisfied: aiofiles<25.0,>=22.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (24.1.0)
Requirement already satisfied: anyio<5.0,>=3.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (4.9.0)
Requirement already satisfied: brotli>=1.1.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (1.1.0)
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Requirement already satisfied: huggingface-hub>=0.28.1 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.33.4)
Requirement already satisfied: jinja2<4.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (3.1.6)
Requirement already satisfied: markupsafe<4.0,>=2.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (3.0.2)
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Requirement already satisfied: python-multipart>=0.0.18 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.0.20)
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Requirement already satisfied: semantic-version~=2.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (2.10.0)
Requirement already satisfied: starlette<1.0,>=0.40.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.47.1)
Requirement already satisfied: tomlikit<0.14.0,>=0.12.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.13.3)
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Requirement already satisfied: uvicorn>=0.14.0 in /usr/local/lib/python3.11/dist-packages (from gradio) (0.35.0)
Requirement already satisfied: fsspec in /usr/local/lib/python3.11/dist-packages (from gradio-client==1.11.0->gradio) (2025.7.0)
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Requirement already satisfied: certifi in /usr/local/lib/python3.11/dist-packages (from httpx>=0.21.2->elevenlabs) (2025.7.14)
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Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.11/dist-packages (from pandas<3.0,>=1.0->gradio) (2025.2)  
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 Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.11/dist-packages (from requests>=2.20->elevenlabs  
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 Downloading elevenlabs-2.8.0-py3-none-any.whl (767 kB)

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767.3/767.3 kB 29.1 MB/s eta 0:00:00

Installing collected packages: elevenlabs

#import libraries

```
import gradio as gr
import requests
from elevenlabs.client import ElevenLabs
from IPython.display import Audio
```

#setting up ElevenLabs API

```
api_key="sk_ae2fc00a3ef4ec7414d98a3ff7576cf44435490504cd6558"
```

#write a function to generate speech

```
import requests
```

```
def text_to_speech_elevenlabs(text, voice_id, api_key, stability=0.3, similarity=0.8):
    url = f"https://api.elevenlabs.io/v1/text-to-speech/{voice_id}"
    headers = {
        "Accept": "audio/mpeg",
        "Content-Type": "application/json",
        "xi-api-key": api_key
    }
    payload = {
        "text": text,
        "model_id": "eleven_multilingual_v2",
        "voice_settings": {
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        "stability": stability,
        "similarity_boost": similarity
    }
}
response = requests.post(url, headers=headers, json=payload)
if response.status_code == 200:
    output_path = "/content/igbo_tts_output.mp3"
    with open(output_path, "wb") as f:
        f.write(response.content)
    return output_path
else:
    return None

#Igbo Pronunciation tuner using syllable Splitting

import re

def improved_syllable_split(word):
    return re.findall(r'(?:[bcdfghjklmnpqrstvwxyz]?)(?:[aeiouqɥɨ]{1,2})', word, flags=re.IGNORECASE)

def auto_tune_text(text):
    words = text.split()
    tuned_words = []
    for word in words:
        if len(word) <= 3:
            tuned_words.append(word)
        else:
            syllables = improved_syllable_split(word)
            tuned_words.append('-'.join(syllables))
    return ' '.join(tuned_words)

#enabling download option

import gradio as gr

voice_ids = {
    "Eze (Native Igbo Voice)": "QLniWkGYsJa91mXrxl3c" # Corrected invalid character
}

def generate_audio(text, voice_name, api_key, auto_tune, stability, similarity):
    if auto_tune:
        tuned_text = auto_tune_text(text)

```

```
else:
    tuned_text = text
voice_id = voice_ids[voice_name]
path = text_to_speech_elevenlabs(tuned_text, voice_id, api_key, stability, similarity)
if path:
    return path, tuned_text
else:
    return None, "Failed to generate audio. Check your API key or voice settings."

with gr.Blocks() as demo:
    gr.Markdown("#Igbo Text-to-Speech App")
    gr.Markdown("Convert Igbo text into realistic speech using ElevenLabs. Test pronunciation, tune syllables, and download audio!")

    with gr.Row():
        text_input = gr.Textbox(label="Enter Igbo Text", placeholder="Eg. Ndewo! Aha m bu Amarachi.", lines=3)
        api_key_input = gr.Textbox(label="ElevenLabs API Key", type="password")

    voice_dropdown = gr.Dropdown(label="Choose Voice", choices=list(voice_ids.keys()), value="Eze (Native Igbo Voice)")
    auto_tune = gr.Checkbox(label="Auto Tune Igbo Pronunciation (syllable split)", value=True)
    stability = gr.Slider(label="Stability", minimum=0.1, maximum=1.0, value=0.3)
    similarity = gr.Slider(label="Similarity Boost", minimum=0.1, maximum=1.0, value=0.8)

    generate_button = gr.Button("Generate Speech")
    audio_output = gr.Audio(label="Listen")
    file_output = gr.File(label="Download MP3")
    tuned_text_display = gr.Textbox(label="Tuned Text", lines=2)

    generate_button.click(fn=generate_audio,
                        inputs=[text_input, voice_dropdown, api_key_input, auto_tune, stability, similarity],
                        outputs=[audio_output, tuned_text_display])

demo.launch(share=True)
```

↔ Colab notebook detected. To show errors in colab notebook, set debug=True in launch()  
\* Running on public URL: <https://0f4b53297da4c1e24f.gradio.live>

This share link expires in 1 week. For free permanent hosting and GPU upgrades, run `gradio deploy` from the terminal in the working

Similarity Boost

0.1

0.8

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