



REPORTE | MÓDULO 3

PROYECTO FINAL | NLP

Inteligencia artificial avanzada para la ciencia de
datos II (Gpo 503)

PROFESOR

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EQUIPO 4

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Contenido

Objetivo del proyecto y comentarios personales.....	3
Streamlit	4
Interfaz antes de usarse	4
Transcripción	5
Resumen.....	7
Código [Ver en GitHub]	8

Objetivo del proyecto y comentarios personales

El objetivo principal de este proyecto es desarrollar una interfaz utilizando Streamlit que integre diversas APIs de Procesamiento Natural de Lenguaje (NLP) y Reconocimiento de Voz. Se busca crear una aplicación que permita cargar un archivo de audio, transcribir el contenido de dicho archivo y generar un resumen de la transcripción.

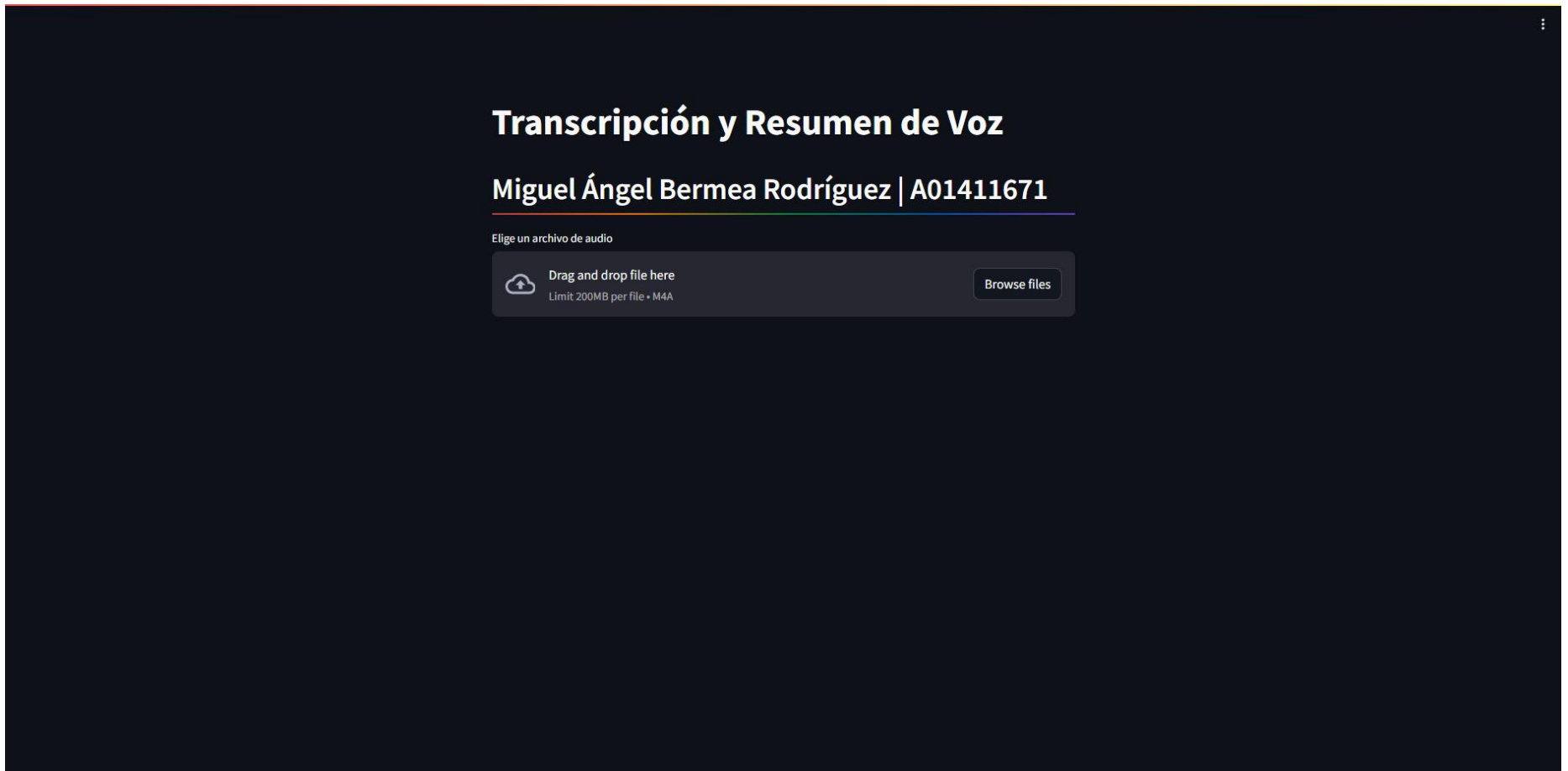
El proyecto destaca por su enfoque práctico en la integración de tecnologías de procesamiento de lenguaje natural. La elección de **Streamlit** como marco de desarrollo para la interfaz facilita la creación de aplicaciones web interactivas con un mínimo esfuerzo. La inclusión de la API de OpenAI permite acceder a modelos potentes, como GPT-3.5-turbo, para realizar tareas complejas de procesamiento de lenguaje natural.

Un aspecto destacado de este proyecto es la decisión acertada de utilizar la versión más reciente de OpenAI, específicamente el **modelo GPT-3.5-turbo** para la generación de texto y el **modelo Whisper** para la transcripción de audio. Esta elección refleja una atención a la vanguardia de las tecnologías disponibles y garantiza el acceso a las últimas mejoras y capacidades de los modelos.

En el código presentado, se puede observar la adaptación a la nueva sintaxis de OpenAI para las solicitudes a la API. Asimismo, en la transcripción de audio utilizando el modelo Whisper, se ajusta la solicitud a la API de acuerdo con la nueva sintaxis.

Streamlit

Interfaz antes de usarse



Transcripción y Resumen de Voz

Miguel Ángel Bermea Rodríguez | A01411671

Elige un archivo de audio



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Transcripción:

Especially, and I would even argue in the last four weeks, you really can't build fitness for the Ironman distance, but you can ruin your fitness for the Ironman distance, especially within the last two to three weeks, by, because, so it takes, it takes your body to adapt to a full load, a full Ironman load, it takes four to six weeks for your body to fully adapt to it, for you to go through the full depression cycle, all the way through the compensation cycle, and come back to the place where you're ready to race again. So if you take, if you take your body, and you're in that super compensation phase, and you start training in that, which is gonna be in these last two weeks, which you're in right now, and you add load to it, and drop down again, you're gonna lose everything that you gained from those big efforts that you did in the four to six weeks out from your race, okay? So you have to give your body time to rest, you need to let your body fully recover from those efforts, and even get stronger. So you can keep the sword sharp by doing short, quick efforts, you can get out the door to work out some of your, whatever your issues are, if they're mental, I need to go out and do something, fine, zone one, zone two, easy, 30, 45 minutes to at least open the body up, and remind yourself what you're gonna be doing, those things are fine. No weight training in the last two to four weeks, right now, you know, that does not belong in a program in the last two weeks for sure, I'd recommend usually even in the last four weeks, unless you've been super consistent with it, all the way through your, all the way through your training. Like not even squat, or push up, oops, yeah,

peak, you think it should be? That's appropriate, right? Yeah. Yeah. So you wanna be going from your peak volume, you should be cutting back to like 75%, four weeks out, two thirds, three weeks out, and then two weeks out, you should be almost half, half of your peak volume. Okay. Yeah. And then in the last week, it really depends, everybody's different, everybody tapers differently. And so you're probably not gonna get it right on your first Ironman taper, but that's okay, right? I mean, and you probably didn't get it right when you did your first taper to an Olympic distance either. We'll find that one out. Yeah, figure it out. Yeah. And each time you do it, you do something a little bit different. Yeah. How about the nutrition? I mean, I know people, that's a big thing for Ironman. I know people, you know, train perfectly. One thing, you know, I found it challenging during the even training session, like two weeks ago, I finished bike and finished like a half distance marathon, almost like 12 or 13 mile. It's really shut down. It's just like drastically, my body, one minute is feel really good, and the second minute, I was heavy, I lose everything, you know, I have to walk. So I don't know, is there any, do you, have you seen somebody like this or what's going on? Ironman race. There's people that are going through that. Yeah. Yeah. Like even Josh, he told last year, he did a, for Ironman, I got a GI issue. So ruin everything. How to, first, what's the reason for that? The second, how do we prevent? Who knows? There's any number of reasons, but the best thing is to practice it like during your training, right? So you want to find that what works for you in training and take that to your race. That's the most important thing is. Is, is trying different things, finding things that don't work and avoiding them, and then making sure that when you get to your race, you have adequate nutrition where you don't start to short on calories, like run out, or you want to make sure you have some redundancy. So if you've been training on goos and they have the stingers or whatever at the race and you completely switch because you ran out, you're putting yourself at risk for having a GI, potential GI issue. Ironman announces what they're going to use, you know, weeks, months, year in advance, typically. So you can practice on, I mean, this is for, this isn't for this race. This is for the next race, right? This is for World Bay, this is for Oregon, but you can train on what they're going to have there and know if it's going to work for you. Can I bring it up? Yes, you can absolutely bring it up, but if you, if you, so then that's what I'm saying is when you're practicing before or training before, you dial everything in ahead of time, but there's always, that's what I'm saying, but there's, you should have redundancies because people drop water bottles, people drop gels, people lose entire packs of stuff. You take longer than you expected? You take longer than you expect. You never know. So you should have redundancies on the race. Is there any, like a rule of thumb or some, I'm practicing like a hundred gram goo every hour, you know, in combination with infinity, it's infinity, the sports drink, infinite, infinite sports drink. But, yeah, I think that's just on bike. On the run, I think that's what happens. Last time I was running, you know, feeling good, I didn't take enough goo and, because you cannot carry a bottle with you during training. If you go to the race, yes, they'll provide the drink. So I think I'm short on that and your body just, everything I think is kind of slow ball, right? You're pushing yourself to a limit and then from there you just shut down. I don't know, is there

Resumen

right? You're pushing your body to a limit and then from there you just shut down. I don't know, is there any tips for the running portion, nutrition? Don't give up. Just keep eating, right? It sounds like he bumped. I think that's what happened. Yeah, I mean, was it hot? It wasn't really hot. It's just my body, I mean, I don't want to eat. That's a part, right? Yeah, there's a part where your stomach is saturated. Salt, a lot of times, I don't know, maybe that's where Mike was headed with his question, but salt, a lot of times, is one of the things that you need to have more of. If you don't have a proper balance of salt in your stomach, you're not able to absorb the carbohydrates. So even if you keep slamming gels, you end up with this, like, lead weight in your stomach because you aren't able to, the stomach's not able to process it because it doesn't have enough salt in your stomach cavity to absorb the liquid. And you really need to dial in the right amount for you because there's a huge range on what people need for salt. There's really heavy salt sweaters and there's light, and you can do too much salt. And you have this, like, really similar, like, cramping from too much salt, so you really need to dial in in your training.

Resumen:

- Building fitness for the Ironman distance is difficult in the last four weeks
- Training too hard in the last two weeks can ruin your fitness
- Rest and recovery are important for allowing the body to adapt and get stronger
- Short, easy workouts are fine during the taper period
- Weight training should be avoided in the last two to four weeks
- Volume should be gradually reduced leading up to the race
- Tapering strategies may vary for each individual
- Nutrition is crucial for Ironman races
- Practice nutrition strategies during training to find what works for you
- Redundancies in nutrition should be planned for in case of unexpected issues
- Salt balance is important for proper absorption of carbohydrates
- Finding the right amount of salt for your body is crucial

Código [\[Ver en GitHub\]](#)

```
1 import streamlit as st
2 from openai import OpenAI
3
4 client = OpenAI(api_key="APIKEY")
5
6
7 def transcribe_audio(file_path):
8     with open(file_path, "rb") as audio_file:
9         transcript = client.audio.transcriptions.create(
10             model="whisper-1",
11             file=audio_file,
12             response_format="text"
13         )
14     return transcript
15
16
17 def CustomChatGPT(temperature, user_input):
18     response = client.chat.completions.create(
19         model="gpt-3.5-turbo",
20         temperature=temperature,
21         messages=[{
22             "role": "system",
23             "content": "You are an office administer, summarize the text in key points"
24         }, {
25             "role": "user",
26             "content": user_input
27         }])
28     return response.choices[0].message.content
29
30
31 # Interfaz de Streamlit
32 st.title('Transcripción y Resumen de Voz')
33 st.header('Miguel Ángel Bermea Rodríguez | A01411671', divider='rainbow')
34 uploaded_file = st.file_uploader("Elige un archivo de audio", type=['m4a'])
35
36 if uploaded_file is not None:
37     file_path = uploaded_file.name
38     transcription = transcribe_audio(file_path)
39     st.subheader('Transcripción:', divider='rainbow')
40     st.write(transcription)
41     summary = CustomChatGPT(0, transcription)
42     st.subheader('Resumen:', divider='rainbow')
43     st.write(summary)
44
```