






ChatBot
Aula 10


Prof. Me Daniel Vieira





Atividade - Alterar o código do café para iniciar com o pdf carregado e hospedar no Hugging Face


 Spaces


 profdanielvieira95 / **aula10_chatbot_teste** 


 like 0


 Running


 Logs


 App

 Files

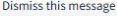
 Community


 Settings


 ?






Hugging Face is way more fun with friends and colleagues! 🥳 [Join an organization](#)


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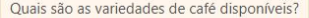
 **Chatbot Serenatto – Especialista em Cafés**

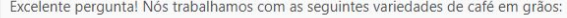
 Conversa

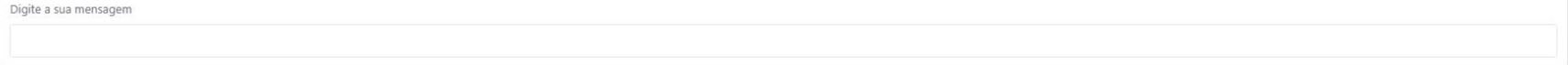
 ola








- Bourbon Vermelho
- Bourbon Amarelo
- Blend Especial (Mistura de Bourbon Amarelo e Vermelho)



 Limpar

Atividade

Hospedagem do chatbot no Space do Hugging Face

<https://huggingface.co/>

Atividade



Hugging Face

Search models, datasets, users...

Models

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Spaces · The AI App Directory

+ New Space

What is Spaces?

Ask anything you want to do with AI



Image Generation



Video Generation



Text Generation



Language Translation



Speech Synthesis



3D Modeling



Object Detection



Text Analysis



Image Editing



Code Generation



Question

Spaces of the week



24 Mar 2025



Filter by name



Sort: Relevance

Running on L40S

321

Cube3d Interactive 🤖

interactive demo for cube 3d model

Roblox

4 days ago

Running on ✨ ZERO

321

InfiniteYou-FLUX 🤖

Flexible Photo Recrafting While Preserving Your Identity

ByteDance

about 7 hours ago

Running on ✨ ZERO

173

SmolDocling 🤖

Convert images and text to document formats

ds4sd

8 days ago

Running

134

Hunyuan T1 🤖

Hunyuan T1模型体验

tencent

4 days ago

Atividade



Create a new Space

Spaces are Git repositories that host application code for Machine Learning demos.
You can build Spaces with Python libraries like Streamlit or Gradio, or using Docker images.

Owner

profdanielvieira95

Space name

New Space name

Short description

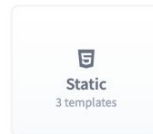
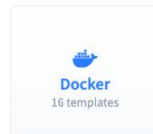
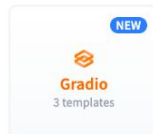
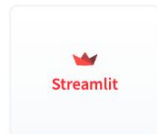
Short Description

License

License

Select the Space SDK

You can choose between Streamlit, Gradio and Static for your Space. Or [pick Docker](#) to host any other app.



Space hardware Free

CPU basic · 2 vCPU · 16 GB · FREE

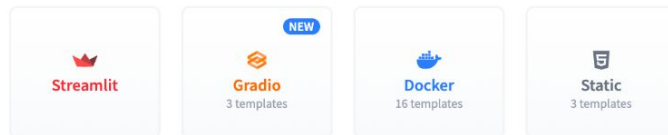
Atividade

License

License

Select the Space SDK

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Space hardware Free

CPU basic · 2 vCPU · 16 GB · FREE

You can switch to a different hardware at any time in your Space settings.
You will be billed for every minute of uptime on a paid hardware.



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Anyone on the internet can see this Space. Only you (personal Space) or members of your organization (organization Space) can commit.



Private

Only you (personal Space) or members of your organization (organization Space) can see and commit to this Space.

Create Space

Atividade



Hugging Face

Search models, datasets, users...

Models

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2.6 TFLOPS

Daniel Vieira

profdanielvieira95

0 followers · 1 following

Edit profile

Settings

AI & ML interests

AI, ML, LLM, IOT

Recent Activity

Spaces 3



Sort: Recently updated

Running

Chatbot Seranato Cafe 🏠

Upload a PDF to chat with a coffee expert bot

profdanielvieira95

30 minutes ago

z² Sleeping

Aula08chatbot 🗨️

Ask about agriculture and get AI answers

profdanielvieira95

7 days ago

z² Sleeping

Teste Chatbot 🐱

deploy do chatbot para agricultura

profdanielvieira95

9 days ago

Models

Atividade

1- Modificar o código da aula do chatbot para o pdf de tipos de café já estar carregado dos e juntar o código para poder hospedar a aplicação no Hugging Face.

<https://huggingface.co/>

Criando o Space no Hugging Face



Create a new Space

Spaces are Git repositories that host application code for Machine Learning demos.
You can build Spaces with Python libraries like [Streamlit](#) or [Gradio](#), or using [Docker images](#).

Owner

profdanielvieira95



Space name

/ aula10_chatbot_teste

Short description

Short Description

License

License

Select the Space SDK

You can choose between Streamlit, Gradio and Static for your Space. Or [pick Docker](#) to host any other app.



Streamlit



Gradio
3 templates



Docker
16 templates



Static
3 templates

Choose a Gradio template:

Blank

chatbot

text-to-image

leaderboard

Criando o Space no Hugging Face

Choose a Gradio template:

 Blank

 chatbot

 text-to-image

 leaderboard

Space hardware Free

CPU basic · 2 vCPU · 16 GB · FREE

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Space Dev Mode BETA PRO subscribers

Dev mode allows you to remotely access your Space using SSH or VS Code. [Learn more.](#)

☐ Enable dev mode

This feature is available for [PRO](#) users only.

☒  **Public**

Anyone on the internet can see this Space. Only you (personal Space) or members of your organization (organization Space) can commit.

☐  **Private**

Only you (personal Space) or members of your organization (organization Space) can see and commit to this Space.

Create Space

Criando o Space no Hugging Face

Choose a Gradio template:

 Blank

 chatbot

 text-to-image

 leaderboard

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Create Space

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 Hugging Face

Search models, datasets, users...

 Models

 Datasets

 Spaces

 Posts

 Docs

 Enterprise

Pricing

⌵




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 Spaces:  profdanielvieira95 / **aula10_chatbot_teste**

♥ like 0

 No application file

📄 Logs

 App

 Files

 Community

 Settings

⋮

📁 main ▾ aula10_chatbot_teste







🔍 Go to file

Ctrl+K


 1 contributor

🕒 History: 1 commit





+ Add file ▾




 profdanielvieira95	initial commit	45e0058	VERIFIED				less than a minute ago
 .gitattributes	 Safe	1.62 kB		initial commit			less than a minute ago
 README.md		238 Bytes		initial commit			less than a minute ago


















Criando o Space no Hugging Face

 **Hugging Face**

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Spaces:  profdanielvieira95 / **aula10_chatbot_teste**  like 0 Running  Logs App Files Community Settings 

 main  aula10_chatbot_teste Ctrl+K  1 contributor History: 6 commits + Add file

 profdanielvieira95	Update app.py	8db2cca	VERIFIED		10 minutes ago
 .gitattributes	 Safe	1.57 kB		serenato.pdf	30 minutes ago
 README.md	 Safe	238 Bytes		initial commit	32 minutes ago
 app.py	 Safe	4.03 kB		Update app.py	10 minutes ago
 requirements.txt	 Safe	427 Bytes		Update requirements.txt	11 minutes ago
 serenatto.pdf	 Safe	134 kB	 LFS 	serenatto.pdf	30 minutes ago

Bibliotecas no requirements

Criar o arquivo requirements no Space do Hugging Face e colar as bibliotecas

Biblioteca base do LlamaIndex

llama-index

Integração com embeddings do Hugging Face

llama-index-embeddings-huggingface

Integração com Chroma como vetor store

llama-index-vector-stores-chroma

LLM Groq (LLaMA 3)

llama-index-llms-groq

Banco vetorial local

chromadb

Interface gráfica

gradio

Manipulação de PDFs

PyPDF2

Código

```
import os
import gradio as gr
from typing import List
from llama_index.core import SimpleDirectoryReader, StorageContext, VectorStoreIndex
from llama_index.core.node_parser import SentenceSplitter
from llama_index.embeddings.huggingface import HuggingFaceEmbedding
from llama_index.vector_stores.chroma import ChromaVectorStore
from llama_index.llms.groq import Groq
from llama_index.core.memory import ChatSummaryMemoryBuffer
import chromadb
from tempfile import TemporaryDirectory
from PyPDF2 import PdfReader
```

Código

```
# Wrapper de embedding compatível com ChromaDB
```

```
class ChromaEmbeddingWrapper:
```

```
    def __init__(self, model_name: str):
```

```
        self.model =
```

```
HuggingFaceEmbedding(model_name=model_name)
```

```
    def __call__(self, input: List[str]) -> List[List[float]]:
```

```
        return self.model.embed_documents(input)
```


Código

```
# Inicializa modelos de embedding
embed_model = HuggingFaceEmbedding(model_name='intfloat/multilingual-e5-large')
embed_model_chroma =
ChromaEmbeddingWrapper(model_name='intfloat/multilingual-e5-large')

# Inicializa ChromaDB
chroma_client = chromadb.PersistentClient(path='./chroma_db')
collection_name = 'documentos_serenatto'
chroma_collection = chroma_client.get_or_create_collection(
    name=collection_name,
    embedding_function=embed_model_chroma
)
```

Código

```
vector_store = ChromaVectorStore(chroma_collection=chroma_collection)
storage_context = StorageContext.from_defaults(vector_store=vector_store)

# Inicializa LLM da Groq
Groq_api = os.environ.get("GROQ_API_KEY")
llms = Groq(model='llama3-70b-8192', api_key='gsk_D6qheWgXIaQ5jl3Pu8LNWGdyb3FYJXU0RvNNNoIpEKV1NreqLAFnf')

# Estados globais
document_index = None
chat_engine = None
```

Código

Carregamento único do PDF

```
def carregar_pdf_inicial():  
    global document_index, chat_engine  
    try:  
        with TemporaryDirectory() as tmpdir:  
            pdf_path = "serenatto.pdf"  
            text = ""  
            reader = PdfReader(pdf_path)  
            for page in reader.pages:  
                text += page.extract_text() or ""  
  
            with open(os.path.join(tmpdir, "temp.txt"), "w", encoding="utf-8") as f:  
                f.write(text)  
            documentos = SimpleDirectoryReader(input_dir=tmpdir)  
            docs = documentos.load_data()
```

Código

```
node_parser = SentenceSplitter(chunk_size=1200)
nodes = node_parser.get_nodes_from_documents(docs, show_progress=True)

document_index = VectorStoreIndex(nodes, storage_context=storage_context,
embed_model=embed_model)

memory = ChatSummaryMemoryBuffer(llm=llms, token_limit=256)

chat_engine = document_index.as_chat_engine(
    chat_mode='context',
    llm=llms,
    memory=memory,
    system_prompt="Você é especialista em cafés da loja Serenatto. Responda de
forma simpática e natural sobre os grãos disponíveis." )
```

Código

```
print("PDF carregado com sucesso.")
```

```
except Exception as e:  
    print(f"Erro ao carregar PDF: {e}")
```

Código

```
# Função de chat
def converse_com_bot(message, chat_history):
    global chat_engine

    if chat_engine is None:
        return "Erro: o bot ainda não está pronto.", chat_history

    response = chat_engine.chat(message)

    if chat_history is None:
        chat_history = []

    chat_history.append({"role": "user", "content": message})
    chat_history.append({"role": "assistant", "content": response.response})

    return "", chat_history
```

Código

```
# Resetar conversa
def resetar_chat():
    global chat_engine
    if chat_engine:
        chat_engine.reset()
    return []

# Carregar PDF na inicialização
carregar_pdf_inicial()
```

Código

```
# Interface Gradio
```

```
with gr.Blocks() as app:
```

```
    gr.Markdown("# ☕ Chatbot Serenatto – Especialista em Cafés")
```

```
    chatbot = gr.Chatbot(label="Conversa", type="messages")
```

```
    msg = gr.Textbox(label='Digite a sua mensagem')
```

```
    limpar = gr.Button('Limpar')
```

```
    msg.submit(converse_com_bot, [msg, chatbot], [msg, chatbot])
```

```
    limpar.click(resetar_chat, None, chatbot, queue=False)
```

```
app.launch()
```


Atividade

2- Utilizar o código anterior para Criar um chatbot para realizar a leitura de um pdf pré carregado com informações sobre agricultura, tipos de solo, que auxilie o agricultor na escolha da semente e como preparar o solo para o plantio, bem como definir os limites de temperatura para o solo e irrigação de acordo com a semente plantada.

Atividade

Você deve criar um banco de dados vetorial para armazenar as informações do pdf carregado conforme o exemplo da aula anterior

Perguntas a serem feitas para chatbot assistente Agro

- 1) Por que é importante preparar o solo adequadamente antes do plantio?**
- 2) Quais são os principais tipos de solo e como prepará-los para o cultivo?**
- 3) Quais sensores podem ser utilizados para monitorar a umidade do solo e como funcionam?**
- 4) Como é possível ajustar o pH do solo para atender às necessidades das diferentes culturas?**
- 5) Quais são os principais fertilizantes utilizados e qual a diferença entre fertilizantes orgânicos e químicos?**
- 6) Qual é o processo recomendado para a correção e preparo do solo antes do plantio?**
- 7) Como garantir a fertilidade do solo para diferentes tipos de culturas?**
- 8) Quais são os principais fatores que devem ser levados em consideração ao planejar a irrigação do solo?**
- 9) Quais são as melhores práticas para evitar a compactação do solo e a erosão?**
- 10) Onde um agricultor pode obter mais informações sobre preparo do solo e escolha de sementes?**

Atividade

Subir o código no Teams e criar um relatório documentando os passos para criar o chatbot

Recursos

Clicar em Api Key, atribuir um nome para API e copiar a chave

groqcloud

Playground

Documentation

Metrics


API Keys

Settings

Status





Discord

Chat with us

 Personal

API Keys

Manage your API keys. Remember to keep your API keys safe to prevent unauthorized access.

NAME	SECRET KEY	CREATED	LAST USED	USAGE (24HRS)		
GROQ_API	gsk_...vXRm	05/02/2025	Never	0 API Calls		
groq_api_key	gsk_...B2Zk	05/02/2025	11/02/2025	0 API Calls		

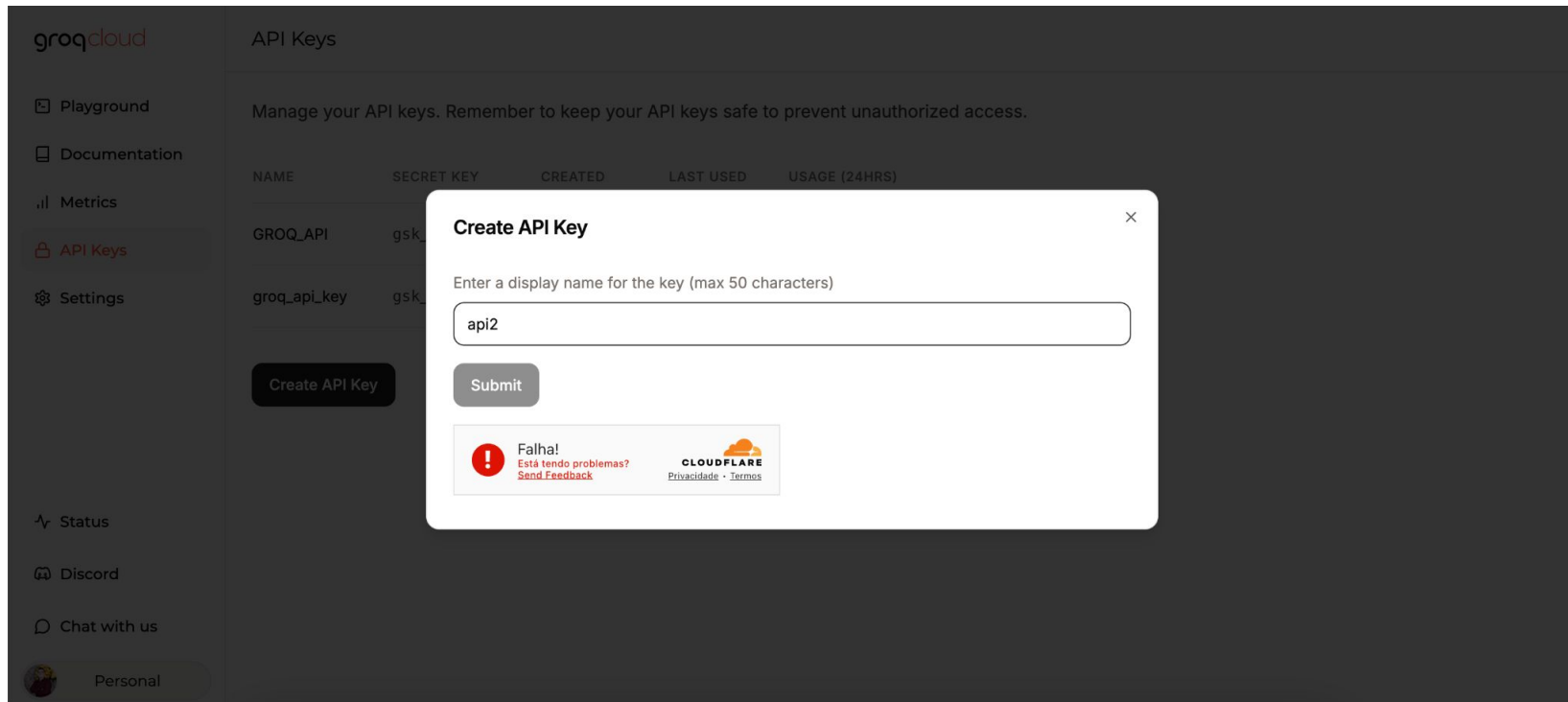
Create API Key

Recursos

Clicar em Api Key, atribuir um nome para API e copiar a chave

Recursos

Clicar em Api Key, atribuir um nome para API clicar em submit



The screenshot shows the Groq Cloud dashboard. On the left is a sidebar with navigation links: Playground, Documentation, Metrics, API Keys (highlighted), Settings, Status, Discord, Chat with us, and a Personal profile section. The main content area is titled 'API Keys' and includes a warning: 'Manage your API keys. Remember to keep your API keys safe to prevent unauthorized access.' Below this is a table with columns: NAME, SECRET KEY, CREATED, LAST USED, and USAGE (24HRS). Two API keys are listed: 'GROQ_API' and 'groq_api_key'. A 'Create API Key' button is visible. A modal dialog is open in the center, titled 'Create API Key', with a close button (X) in the top right. The modal contains the instruction 'Enter a display name for the key (max 50 characters)' and a text input field containing 'api2'. Below the input is a 'Submit' button. At the bottom of the modal is a Cloudflare error banner that reads 'Falha! Está tendo problemas? Send Feedback' and includes the Cloudflare logo and links for 'Privacidade' and 'Termos'.

groqcloud

API Keys

Manage your API keys. Remember to keep your API keys safe to prevent unauthorized access.

NAME	SECRET KEY	CREATED	LAST USED	USAGE (24HRS)
GROQ_API	gsk_...			
groq_api_key	gsk_...			

Create API Key

Enter a display name for the key (max 50 characters)

api2

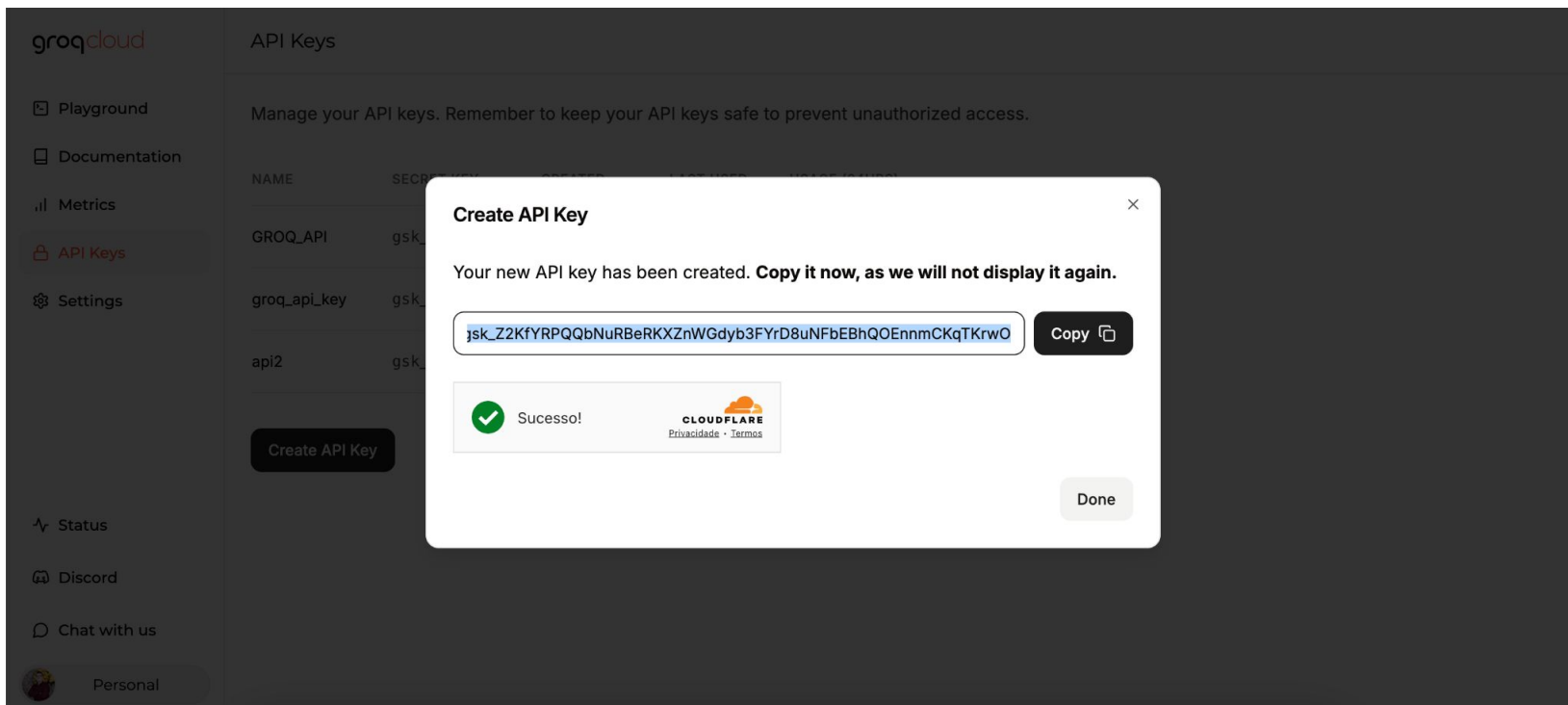
Submit

Falha!
Está tendo problemas?
[Send Feedback](#)

CLOUDFLARE
[Privacidade](#) · [Termos](#)

Recursos

Copiar a API gerada e salvar, pois precisaremos dela



The screenshot shows the Groq Cloud dashboard. On the left is a sidebar with navigation links: Playground, Documentation, Metrics, API Keys (highlighted), Settings, Status, Discord, Chat with us, and a Personal profile section. The main area is titled 'API Keys' and contains a table with columns 'NAME' and 'SECRET'. The table lists three keys: 'GROQ_API' (secret: gsk...), 'groq_api_key' (secret: gsk...), and 'api2' (secret: gsk...). A 'Create API Key' button is at the bottom left of the table. A modal window titled 'Create API Key' is open in the center. It contains the text: 'Your new API key has been created. Copy it now, as we will not display it again.' Below this is a text input field containing the API key: 'jsk_Z2KfYRPQQbNuRBeRKXZnWGdyb3FYrD8uNFbEBhQOEnnmCKqTKrwO'. To the right of the input is a 'Copy' button. At the bottom of the modal is a 'Done' button. A success message at the bottom left of the modal reads 'Sucesso!' with a green checkmark icon and the Cloudflare logo and 'Privacidade - Termos' link.

groqcloud

API Keys

Manage your API keys. Remember to keep your API keys safe to prevent unauthorized access.

NAME	SECRET
GROQ_API	gsk...
groq_api_key	gsk...
api2	gsk...

Create API Key

Create API Key

Successo!

CLOUDFLARE
Privacidade - Termos

jsk_Z2KfYRPQQbNuRBeRKXZnWGdyb3FYrD8uNFbEBhQOEnnmCKqTKrwO

Copy

Done

Obrigado!

Prof. Me Daniel Vieira

Email: danielvieira2006@gmail.com

Linkedin: Daniel Vieira

Instagram: Prof daniel.vieira95

