Package ‘gemini.R’

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Title Interface for 'Google Gemini' API

Version 0.8.0

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Description Provides a comprehensive interface for Google Gemini API,
enabling users to access and utilize Gemini Large Language Model (LLM) functionalities directly from R.
This package facilitates seamless integration with Google Gemini, allowing for advanced language processing,
text generation, and other AI-driven capabilities within the R environment.
For more information, please visit <https://ai.google.dev/docs/gemini_api_overview>.

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Depends R (>= 4.1.0)

URL https://github.com/jhk0530/gemini.R

BugReports https://github.com/jhk0530/gemini.R/issues

Encoding UTF-8

Imports base64enc, cli, httr2, jsonlite, rstudioapi, tools

RoxygenNote 7.3.2

Suggests testthat (>= 3.0.0)

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Repository CRAN

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Contents

`addHistory` *Add history for chating context*

Description

Add history for chating context

Usage

```
addHistory(history, role = NULL, item = NULL)
```

Arguments

`history`	The history of chat
`role`	The role of chat: "user" or "model"
`item`	The item of chat: "prompt" or "output"

Value

The history of chat

gemini *Generate text from text with Gemini*

Description

Generate text from text with Gemini

Usage

```
gemini(prompt, model = "1.5-flash", temperature = 0.5, maxOutputTokens = 1024)
```

Arguments

prompt	The prompt to generate text from
model	The model to use. Options are '1.5-flash', '1.5-pro', '1.0-pro' and '2.0-flash-exp'. Default is '1.5-flash' see https://ai.google.dev/gemini-api/docs/models/gemini
temperature	The temperature to use. Default is 0.5 value should be between 0 and 2 see https://ai.google.dev/gemini-api/docs/models/generative-models#model-parameters
maxOutputTokens	The maximum number of tokens to generate. Default is 1024 and 100 tokens correspond to roughly 60-80 words.

Value

Generated text

See Also

https://ai.google.dev/docs/gemini_api_overview#text_input

Examples

```
## Not run:
library(gemini.R)
setAPI("YOUR_API_KEY")
gemini("Explain dplyr's mutate function")

## End(Not run)
```

gemini.vertex *Generate text from text with Gemini Vertex API*

Description

Generate text from text with Gemini Vertex API

Usage

```
gemini.vertex(prompt = NULL, tokens = NULL)
```

Arguments

prompt	A character string containing the prompt for the Gemini model.
tokens	A list containing the API URL and key from token.vertex() function.

Value

#' A character string containing the generated text.

See Also

https://ai.google.dev/docs/gemini_api_overview#text_input

Examples

```
## Not run:
# token should be created before this. using the token.vertex() function
prompt <- "What is sachins Jersey number?"
gemini.vertex(prompt, tokens)

## End(Not run)
```

gemini_audio *Analyze audio using Gemini*

Description

This function sends audio to the Gemini API and returns a text description.

Usage

```
gemini_audio(
  audio = NULL,
  prompt = "Describe this audio",
  model = "1.5-flash",
  temperature = 0.5,
  maxOutputTokens = 1024
)
```

Arguments

`audio` Path to the audio file (default: uses a sample file). Must be an MP3.

`prompt` A string describing what to do with the audio.

`model` The Gemini model to use ("1.5-flash" or "1.5-pro", "2.0-flash-exp"). Defaults to "1.5-flash".

`temperature` Controls the randomness of the generated text (0-2). Defaults to 0.5.

`maxOutputTokens` The maximum number of tokens in the generated text. Defaults to 1024.

Value

A character vector containing the Gemini API's response.

Examples

```
## Not run:
library(gemini.R)
setAPI("YOUR_API_KEY")
gemini_image(audio = system.file("docs/reference/helloworld.mp3", package = "gemini.R"))

## End(Not run)
```

`gemini_audio.vertex` *Analyze Audio using Gemini Vertex API*

Description

This function sends audio to the Gemini API and returns a text description.

Usage

```
gemini_audio.vertex(
  audio = NULL,
  prompt = "Describe this audio",
  tokens = NULL
)
```

Arguments

`audio`	Path to the audio file (character string). only supports "mp3".
`prompt`	A prompt to guide the Gemini API's analysis (character string, defaults to "Describe this audio").
`tokens`	A list containing the API URL and key from token.vertex() function.

Value

A character vector containing the Gemini API's description of the audio.

`gemini_chat` *Multi-turn conversations (chat)*

Description

Generate text from text with Gemini

Usage

```
gemini_chat(
  prompt,
  history = list(),
  model = "1.5-flash",
  temperature = 0.5,
  maxOutputTokens = 1024
)
```

Arguments

`prompt`	The prompt to generate text from
`history`	history object to keep track of the conversation
`model`	The model to use. Options are '1.5-flash', '1.5-pro', '1.0-pro' and '2.0-flash-exp'. Default is '1.5-flash' see https://ai.google.dev/gemini-api/docs/models/gemini
`temperature`	The temperature to use. Default is 0.5 value should be between 0 and 2 see https://ai.google.dev/gemini-api/docs/models/generative-models#model-parameters
`maxOutputTokens`	The maximum number of tokens to generate. Default is 1024 and 100 tokens correspond to roughly 60-80 words.

Value

Generated text

See Also

https://ai.google.dev/docs/gemini_api_overview#chat

Examples

```
## Not run:
library(gemini.R)
setAPI("YOUR_API_KEY")

chats <- gemini_chat("Pretend you're a snowman and stay in character for each")
print(chats$outputs)

chats <- gemini_chat("What's your favorite season of the year?", chats$history)
print(chats$outputs)

chats <- gemini_chat("How do you think about summer?", chats$history)
print(chats$outputs)

## End(Not run)
```

`gemini_image` *Generate text from text and image with Gemini*

Description

Generate text from text and image with Gemini

Usage

```
gemini_image(
  image = NULL,
  prompt = "Explain this image",
  model = "1.5-flash",
  temperature = 0.5,
  maxOutputTokens = 1024,
  type = "png"
)
```

Arguments

`image`	The image to generate text
`prompt`	The prompt to generate text, Default is "Explain this image"
`model`	The model to use. Options are '1.5-flash', '1.5-pro' and '2.0-flash-exp'. Default is '1.5-flash' see https://ai.google.dev/gemini-api/docs/models/gemini
`temperature`	The temperature to use. Default is 0.5 value should be between 0 and 2 see https://ai.google.dev/gemini-api/docs/models/generative-models#model-parameters
`maxOutputTokens`	The maximum number of tokens to generate. Default is 1024 and 100 tokens correspond to roughly 60-80 words.
`type`	The type of image. Options are 'png', 'jpeg', 'webp', 'heic', 'heif'. Default is 'png'

Value

Generated text

See Also

https://ai.google.dev/docs/gemini_api_overview#text_image_input

Examples

```
## Not run:
library(gemini.R)
setAPI("YOUR_API_KEY")
gemini_image(image = system.file("docs/reference/figures/image.png", package = "gemini.R"))

## End(Not run)
```

gemini_image.vertex *Generate text from text and image with Gemini Vertex API*

Description

Generate text from text and image with Gemini Vertex API

Usage

```
gemini_image.vertex(
  image = NULL,
  prompt = "Explain this image",
  type = "png",
  tokens = NULL
)
```

Arguments

image	The image to generate text
prompt	A character string specifying the prompt to use with the image. Defaults to "Explain this image". Currently ignored.
type	A character string specifying the image type ("png", "jpeg", "webp", "heic", "heif"). Defaults to "png".
tokens	A list containing the API URL and key from token.vertex() function.

Value

A character string containing Gemini's description of the image.

`gen_docs` *Generate Roxygen Documentation*

Description

Generates Roxygen2 documentation for an R function based on the currently selected code.

Usage

```
gen_docs(prompt = NULL)
```

Arguments

`prompt`	A character string specifying additional instructions for the LLM. Defaults to a prompt requesting Roxygen2 documentation without the original code.

Value

A character string containing the generated Roxygen2 documentation.

`gen_tests` *Generates unit test code for an R function.*

Description

Generates unit test code for an R function.

Usage

```
gen_tests(prompt = NULL)
```

Arguments

`prompt`	A character string specifying the prompt for the Gemini model. If NULL, a default prompt is used.

Value

#' A character string containing the generated unit test code.

token.vertex *Generate Gemini Access Token and Endpoint URL*

Description

Generates an access token for the Gemini model and constructs the corresponding endpoint URL.

Usage

```
token.vertex(jsonkey = NULL, model_id = NULL, expTime = 3600)
```

Arguments

`jsonkey`	A path to JSON file containing the service account key from Vertex AI.
`model_id`	The ID of the Gemini model. This will be prepended with "gemini-".
`expTime`	The expiration time of the access token in seconds (default is 3600 seconds, or 1 hour).

Value

A list containing:

`key`	The generated access token.
`url`	The endpoint URL for the Gemini model.

Examples

```
## Not run:
library(gemini.R)
tokens <- token.vertex(jsonkey = "YOURAPIKEY.json", model_id = "1.5-flash")


## End(Not run)
```

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