

Package ‘chatLLM’

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Type Package

Title A Flexible Interface for 'LLM' API Interactions

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Description Provides a flexible interface for interacting with Large Language Model ('LLM') providers including 'OpenAI', 'Groq', 'Anthropic', 'DeepSeek', 'DashScope', and 'GitHub Models'. Supports both synchronous and asynchronous chat-completion APIs, with features such as retry logic, dynamic model selection, customizable parameters, and multi-message conversation handling. Designed to streamline integration with state-of-the-art LLM services across multiple platforms.

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Imports httr (>= 1.4.0), jsonlite (>= 1.7.2), stats

Suggests future, promises, later, testthat, roxygen2

URL <https://github.com/knowusuboaky/chatLLM>,
<https://knowusuboaky.github.io/chatLLM/>

BugReports <https://github.com/knowusuboaky/chatLLM/issues>

NeedsCompilation no

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call_llm

*Unified chat - completion interface***Description**

A unified wrapper for several "OpenAI - compatible" chat - completion APIs (OpenAI, Groq, Anthropic, DeepSeek, Alibaba DashScope, GitHub Models). Accepts either a single 'prompt' ****or**** a full 'messages' list, adds the correct authentication headers, retries on transient failures, and returns the assistant's text response. You can toggle informational console output with 'verbose = TRUE/FALSE'. If the chosen 'model' is no longer available, the function stops early and suggests running 'list_models("<provider>")'.

Arguments

prompt	Character. Single user prompt (optional if 'messages').
messages	List. Full chat history; see *Messages*.
provider	Character. One of "openai", "groq", "anthropic", "deepseek", "dashscope", or "github".
model	Character. Model ID. If 'NULL', uses the provider default.
temperature	Numeric. Sampling temperature (0 - 2). Default '0.7'.
max_tokens	Integer. Max tokens to generate. Default '1000'.
api_key	Character. Override API key; if 'NULL', uses the environment variable for that provider.
n_tries	Integer. Retry attempts on failure. Default '3'.
backoff	Numeric. Seconds between retries. Default '2'.
verbose	Logical. Whether to display informational messages ('TRUE') or suppress them ('FALSE'). Default 'TRUE'.
endpoint_url	Character. Custom endpoint; if 'NULL', a sensible provider - specific default is used.
github_api_version	Character. Header 'X - GitHub - Api - Version'. Default '"2022 - 11 - 28"'.
anthropic_api_version	Character. Header 'anthropic - version'. Default '"2023 - 06 - 01"'.
...	Extra JSON - body fields (e.g. 'top_p', 'stop', 'presence_penalty').
.post_func	Internal. HTTP POST function (default 'httr::POST').

Details

Core chat - completion wrapper for multiple providers

Value

Character scalar: assistant reply text.

Messages

* ‘prompt’ - character scalar treated as a single **user** message. * ‘messages’ - list of lists; each element must contain ‘role’ and ‘content’. If both arguments are supplied, the ‘prompt’ is appended as an extra user message.

Examples

```
## Not run:

## 1. Listing available models
# List all providers at once
all_mods <- list_models("all")
str(all_mods)

# List OpenAI-only, Groq-only, Anthropic-only
openai_mods <- list_models("openai")
groq_mods <- list_models("groq")
anthropic_mods <- list_models("anthropic", anthropic_api_version = "2023-06-01")

## 2. Single-prompt interface

# 2a. Basic usage
Sys.setenv(OPENAI_API_KEY = "sk-...")
res_basic <- call_llm(
  prompt = "Hello, how are you?",
  provider = "openai"
)
cat(res_basic)

# 2b. Adjust sampling and penalties
res_sampling <- call_llm(
  prompt = "Write a haiku about winter",
  provider = "openai",
  temperature = 1.2,
  top_p = 0.5,
  presence_penalty = 0.6,
  frequency_penalty = 0.4
)
cat(res_sampling)

# 2c. Control length and retries
res_len <- call_llm(
  prompt = "List 5 uses for R",
  provider = "openai",
  max_tokens = 50,
  n_tries = 5,
  backoff = 0.5
)
cat(res_len)

# 2d. Using stop sequences
res_stop <- call_llm(
```

```

    prompt = "Count from 1 to 10:",
    provider = "openai",
    stop = c("6")
  )
  cat(res_stop)

# 2e. Override API key for one call
res_override <- call_llm(
  prompt = "Override test",
  provider = "openai",
  api_key = "sk-override",
  max_tokens = 20
)
cat(res_override)

# 2f. Factory interface for repeated prompts
GitHubLLM <- call_llm(
  provider = "github",
  max_tokens = 60,
  verbose = FALSE
)
# direct invocation
story1 <- GitHubLLM("Tell me a short story")
cat(story1)

## 3. Multi-message conversation

# 3a. Simple system + user
convo1 <- list(
  list(role = "system", content = "You are a helpful assistant."),
  list(role = "user", content = "Explain recursion.")
)
res1 <- call_llm(
  messages = convo1,
  provider = "openai",
  max_tokens = 100
)
cat(res1)

# 3b. Continue an existing chat by appending a prompt
prev <- list(
  list(role = "system", content = "You are concise."),
  list(role = "user", content = "Summarize the plot of Hamlet.")
)
res2 <- call_llm(
  messages = prev,
  prompt = "Now give me three bullet points."
)
cat(res2)

# 3c. Use stop sequence in multi-message
convo2 <- list(
  list(role = "system", content = "You list items."),

```

```

    list(role = "user", content = "Name three colors.")
  )
res3 <- call_llm(
  messages = convo2,
  stop      = c(".")
)
cat(res3)

# 3d. Multi-message via factory interface
ScopedLLM <- call_llm(provider = "openai", temperature = 0.3)
chat_ctx <- list(
  list(role = "system", content = "You are a math tutor.")
)
ans1 <- ScopedLLM(messages = chat_ctx, prompt = "Solve 2+2.")
cat(ans1)
ans2 <- ScopedLLM("What about 10*10?")
cat(ans2)

## End(Not run)

```

list_models

*List Available Models for Supported Providers***Description**

Retrieve the catalog of available model IDs for one or all supported chat - completion providers. Useful for discovering active models and avoiding typos or deprecated defaults.

Supported providers:

- "openai" - OpenAI Chat Completions API
- "groq" - Groq OpenAI - compatible endpoint
- "anthropic" - Anthropic Claude API
- "deepseek" - DeepSeek chat API
- "dashscope" - Alibaba DashScope compatible API
- "github" - GitHub Models OpenAI - compatible API
- "all" - Fetch catalogs for all of the above

Arguments

provider	Character. One of "github", "openai", "groq", "anthropic", "deepseek", "dashscope" or "all". Case - insensitive.
...	Additional arguments passed to the per - provider helper (e.g. limit for Anthropic, or api_version for GitHub).
github_api_version	Character. Header value for X - GitHub - Api - Version (GitHub Models). Default "2022 - 11 - 28".

anthropic_api_version

Character. Header value for anthropic - version (Anthropic). Default "2023-06-01".

Value

If provider != "all", a character vector of model IDs for that single provider. If provider == "all", a named list of character vectors, one per provider.

See Also

[call_llm](#)

Examples

```
## Not run:
Sys.setenv(OPENAI_API_KEY = "sk-...")
openai_models <- list_models("openai")
head(openai_models)

Sys.setenv(ANTHROPIC_API_KEY = "sk-...")
anthro_models <- list_models("anthropic", anthropic_api_version = "2023-06-01")

Sys.setenv(GH_MODELS_TOKEN = "ghp-...")
github_models <- list_models("github", github_api_version = "2022-11-28")

## End(Not run)
```

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