



OpenAI in PHP

How AI works in theory & how to use it in PHP

VUMC's OpenAI in PHP

Weekly Topics



1. How Generative AI & LLMs Work
2. Prompt Engineering
3. Retrieval-Augmented Generation (RAG)
4. Fine-Tuning a Model
5. Agents
6. **Using VUMC's OpenAI API in PHP**

Key Concepts



- Caveat
- Institutional OpenAI Permissions
- OpenAI Studio (Microsoft Azure)
- A Generic OpenAI Class in PHP
 - Store the API Key in credentials/ directory
 - Microsoft Azure help materials
 - Communicating payloads to the API
 - Parsing responses
- Pro Tips

What I Do & Don't Know



- I know general VUMC routes to access OpenAI in VUMC
- I don't know REDCap- or Data-Core-specific routes to access OpenAI

OpenAI Permissions



- Biomedical Informatics' ADVANCE Center
 - Susannah Rose, DBMI + Psychologist – research in mental health effects of AI
- REDCap survey
 - Risks, benefits, administration, etc.
 - Technical plan
 - <https://redcap.vumc.org/surveys/?s=XFEC7YECHWEMYAFY>
- Project/Program Manager (PM) will need to navigate approval process

OpenAI Studio [MS Azure]



- Home
- Get started
- Model catalog
- Playgrounds
- Chat
- Assistants PREVIEW
- Video PREVIEW
- Audio PREVIEW
- Images
- Tools
- Fine-tuning
- Azure
- OpenAI PREVIEW
- Evaluation
- Stored completions PREVIEW
- Batch jobs

Want to try the latest industry models and agents?
Azure OpenAI is limited to OpenAI models. Upgrading your resource type to Foundry gives you access to Open AI plus third-party models like Meta, Mistral, xAI and more. Build enterprise grade AI agents using your data and tools. [Get started](#) [Remind me later](#)

***Ignite announcements are only available in Microsoft Foundry. Upgrade now to access the latest features!*

Welcome to Azure OpenAI

Explore the generative AI models and craft unique prompts for your use cases.

Resource configuration		View JSON
Name	Subscription	Subscription ID
VUMC-OpenAI-24 🔗	OpenAI 24 🔗 🔗	d1473afe-754a-4283-8e9f-b2fe9123d705 🔗
View access control (IAM) 🔗		
API key 1	Resource group	Pricing tier
..... 🔗 🔗	OpenAI 🔗 🔗	Standard S0 🔗
	Azure OpenAI endpoint	Location
	https://vumc-openai-24.openai.azure.com/ 🔗	eastus2 🔗

Azure OpenAI help

What is Azure OpenAI?
Azure OpenAI provides access to OpenAI's models with the security and enterprise capabilities of Azure. [Learn more 🔗](#)

Relevant resources

OpenAI Studio [MS Azure]



- Behind VPN; keeps data within Vanderbilt VPN
- Provides API and URL endpoint
- PM can:
 - Configure deployment between GPT models
 - Fine tune
 - Support RAG (if have permission)

Generic OpenAI class



<https://edgeforscholars.vumc.org/openai-in-php/>

API Key



- Store in credentials/ directory, not in code
- Unique to each project
- Do not share or borrow others' API keys in production!
 - Test code might borrow other, related API keys for testing, but need to be moved for production

MS Azure Help Materials



- No PHP-specific help
- Translate from:
 - Rest API:
 - <https://learn.microsoft.com/en-us/rest/api/azure/>
 - <https://learn.microsoft.com/en-us/azure/foundry/openai/latest?view=foundry>
 - Can use Python code to grab JSONs

JSON Payloads to API



```
$postdata = [ "messages" => [  
  [  
    "role" => "user", // or "system"  
    "content" => $message  
  ]],  
  "temperature" => $this->temperature,  
  "seed" => self::getSeed(),  
];
```

JSON Payloads to API



```
$postdata = [ "messages" => [  
  [  
    "role" => "system",  
    "content" => $context    // behind the scenes  
  ], [  
    "role" => "user",  
    "content" => $message  
  ], ],  
"temperature" => $this->temperature,  
"seed" => self::getSeed(), ];
```

JSON Payloads to API



First, you must send as an HTTP Header

api-key: \$token

and ask for a response in

Content-Type: application/json

Parsing Responses from API



The JSON is of a standard format. You can read the JSON further if desired. Note that multiple responses can be handled by `$index`.

```
$response["choices"][$index]["message"]["content"]
```

-Or-

```
$response["error"]["message"]
```

-Or-

```
"No Data"
```

Pro Tips



- HTML is supported, but markdown is more concise to send feeds of text from webpages
- Our OpenAI cannot access external websites last I checked but need the textual information passed to it
- Remember that each prompt is self-contained; AI has no memory
- You can run hidden queries to summarize the conversation behind the scenes
- You can instruct AI in the context about role and to have a word limit

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Fine Tuning & Agents