

1.1.4 Semantic Understanding with Large Language Model

Before starting this section, make sure you have completed the API key configuration outlined in the file 1.3 Large Language Model Accessing.

In this lesson, we'll use a large language model to analyze and summarize short passages of text.

- 1) Start by opening a new terminal window, then navigate to the large model project directory:

```
cd large_models/
```

```
> cd large_models/
```

- 2) Next, run the demo program with the following command:

```
python3 openai_llm_nlu_demo.py
```

```
> python3 openai_llm_nlu_demo.py
```

- 3) As shown in the output, the model demonstrates strong summarization abilities.

```
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Artificial intelligence (AI) is a branch of computer science focused on simulating human intelligence through applications like natural language processing, image recognition, and autonomous driving. The advent of deep learning, which mimics brain neuron activity, has significantly advanced AI by enabling pattern recognition and complex task performance using large datasets. Despite its progress, AI faces challenges related to transparency, fairness, and its impact on the job market. Future AI development will rely on ensuring safety and controllability while continuing to drive innovation and societal change.
```

- 4) The result matches the prompt defined in the program — where a passage of text is provided to the model, and it generates a concise summary.

```
5 from config import *
6 from speech import speech
7
8 client = speech.OpenAIAPI(api_key, base_url)
9
10 print(client.llm('Artificial intelligence (AI) is a branch of computer science that aims to create systems that can simulate human intelligent behavior. The application range of AI is very wide, including natural language processing, image recognition, machine learning, autonomous driving, and intelligent recommendation systems. In recent years, the rise of deep learning has greatly promoted the development of artificial intelligence. Deep learning is a type of machine learning that processes and analyzes data by simulating the working method of neurons in the human brain. Using large amounts of data, deep learning models can recognize patterns, classify, and perform excellent performance in complex tasks. Although artificial intelligence has made significant progress in many fields, it still faces some challenges. For example, how to ensure the transparency and fairness of decision-making in AI systems, and how to deal with the impact of AI on the job market are urgent issues to be solved. With the continuous advancement of technology, the potential of artificial intelligence will continue to be tapped, bringing more innovation and changes to society. However, ensuring the safety and controllability of AI will be the key to future development. Summarize the above text in concise language', prompt='', model='gpt-4o-mini'))
```