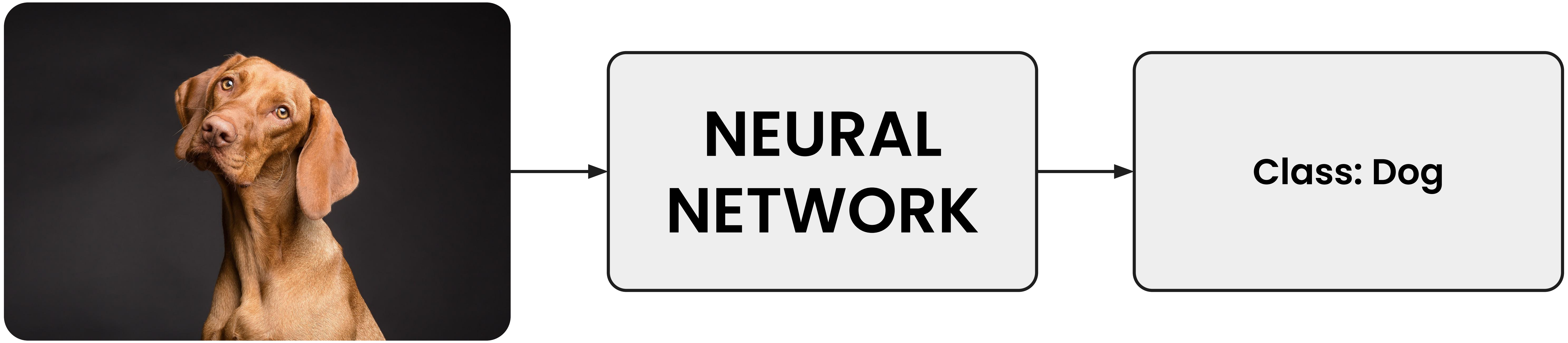
QWEN 2.5VL

IMAGE CLASSIFICATION



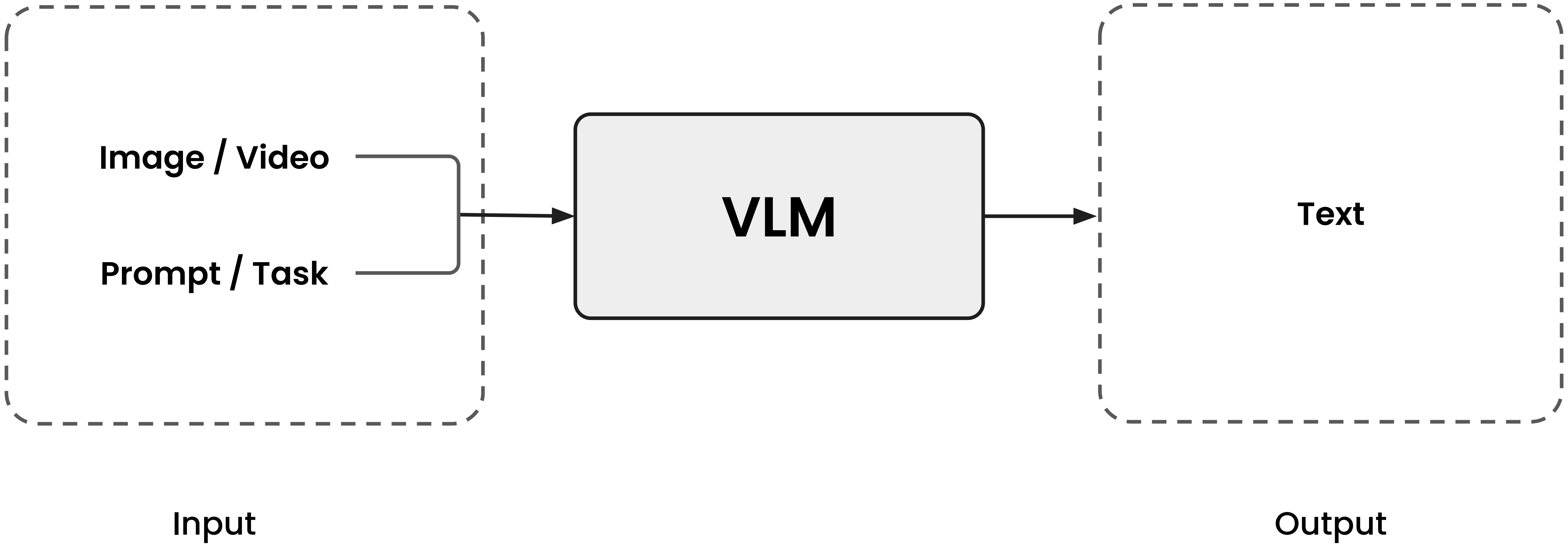
NEURAL NETWORK

Class: Dog

Input

Output

VISION LANGUAGE MODEL



VISION LANGUAGE MODEL

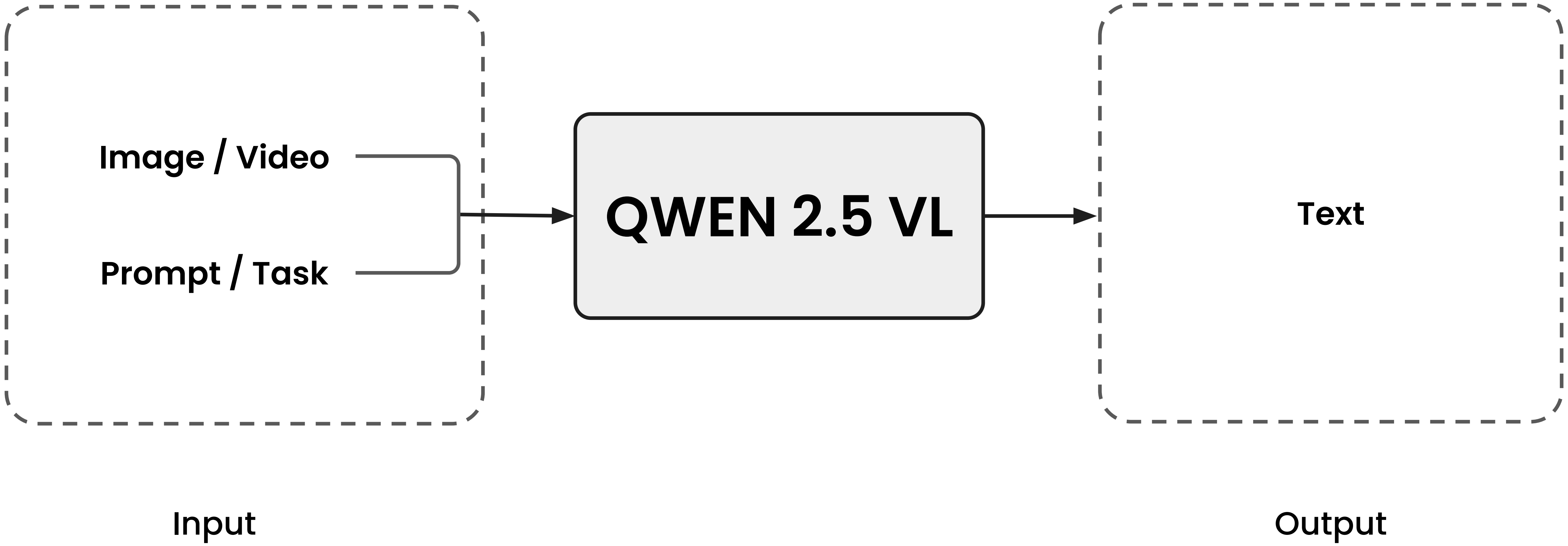


Image / Video

Prompt / Task

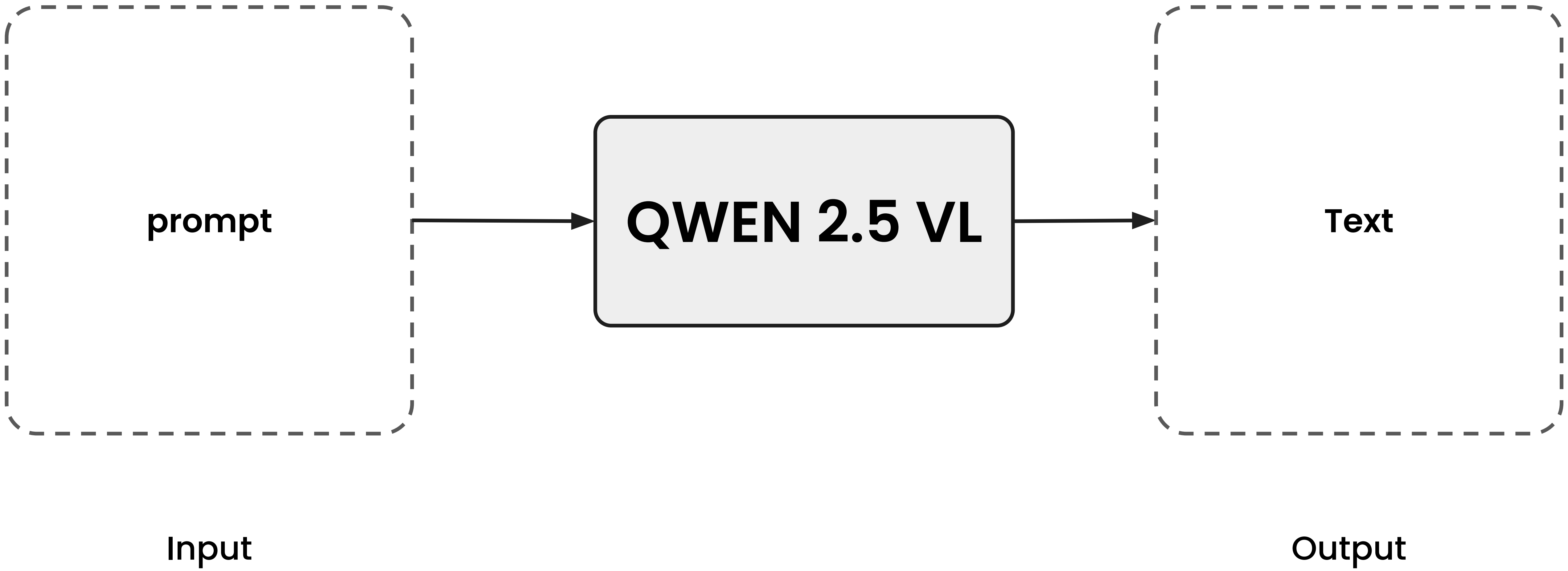
QWEN 2.5 VL

Text

Input

Output

VISION LANGUAGE MODEL



prompt

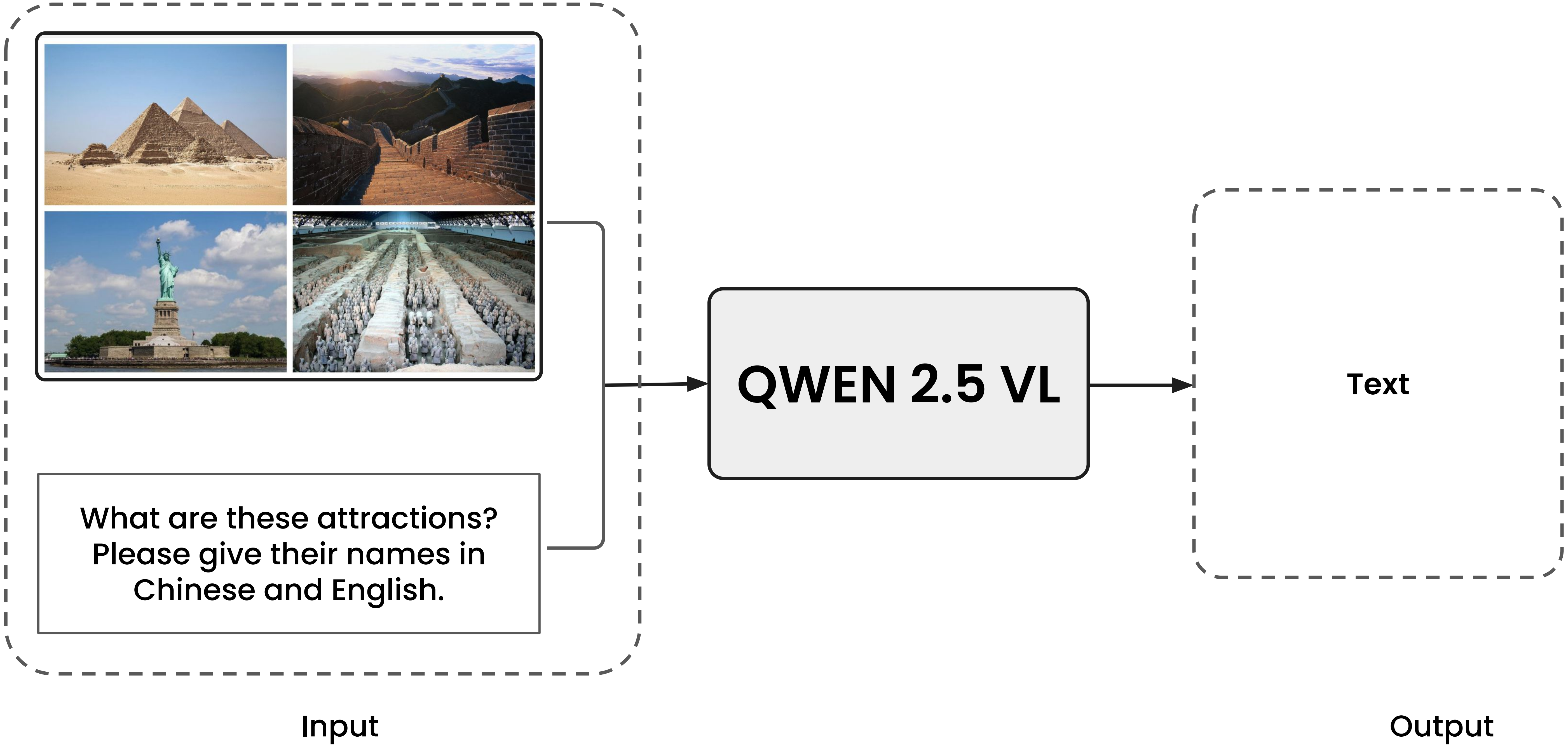
QWEN 2.5 VL

Text

Input

Output

VISION LANGUAGE MODEL



What are these attractions? Please give their names in Chinese and English.

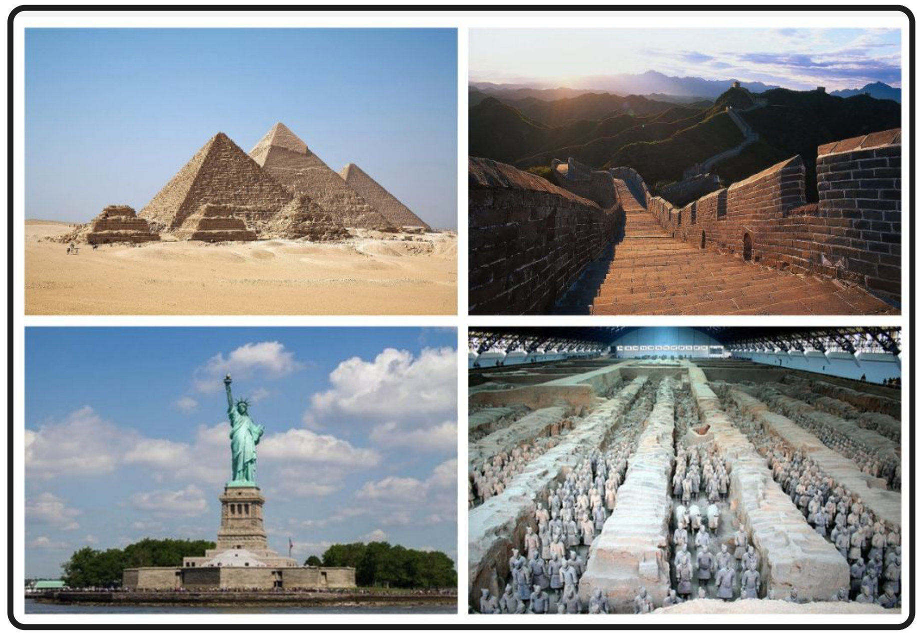
QWEN 2.5 VL

Text

Input

Output

VISION LANGUAGE MODEL



What are these attractions? Please give their names in Chinese and English.

Input

QWEN 2.5 VL

These attractions are:

Top left: **The Great Pyramids of Giza**
（埃及的吉萨大金字塔）

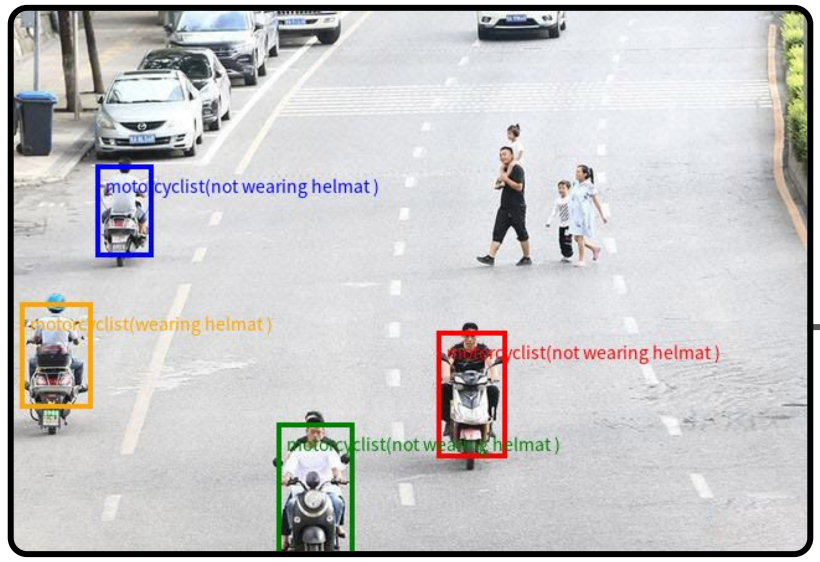
Top right: **The Great Wall of China**
（中国的长城）

Bottom left: **The Statue of Liberty**
（美国的自由女神像）

Bottom right: **The Terracotta Army**
（中国的秦始皇兵马俑）

Output

VISION LANGUAGE MODEL


motorcyclist(not wearing helmat)
motorcyclist(wearing helmat)
motorcyclist(not wearing helmat)
motorcyclist(not wearing helmat)

Detect all motorcyclists in the image and return their locations in the form of coordinates.

The format of output should be like {“bbox_2d”: [x1, y1, x2, y2], “label”: “motorcyclist”, “sub_label”: “wearing helmet” # or “not wearing helmet”}.

Input

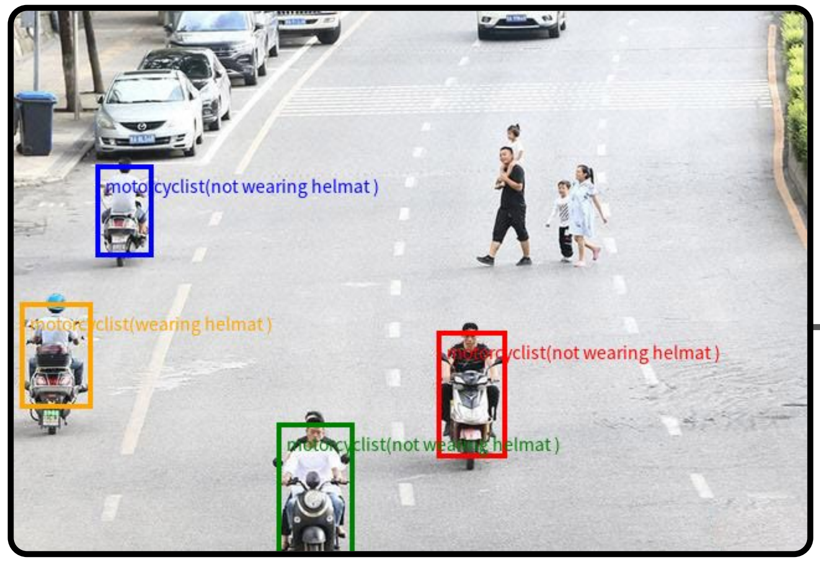
QWEN 2.5 VL

```
[
    {"bbox_2d": [341, 258, 397, 360], "label": "motorcyclist", "sub_label": "not wearing helmat "},
    {"bbox_2d": [212, 332, 274, 448], "label": "motorcyclist", "sub_label": "not wearing helmat "},
    {"bbox_2d": [66, 124, 112, 198], "label": "motorcyclist", "sub_label": "not wearing helmat "},
    {"bbox_2d": [5, 235, 63, 320], "label": "motorcyclist", "sub_label": "wearing helmat "}
]
```

Output

VISION LANGUAGE MODEL

• • • • • • • • • •


motorcyclist(not wearing helmat)
motorcyclist(wearing helmat)
motorcyclist(not wearing helmat)
motorcyclist(not wearing helmat)

Detect all motorcyclists in the image and return their locations in the form of coordinates.

The format of output should be like {“bbox_2d”: [x1, y1, x2, y2], “label”: “motorcyclist”, “sub_label”: “wearing helmet” # or “not wearing helmet”}.

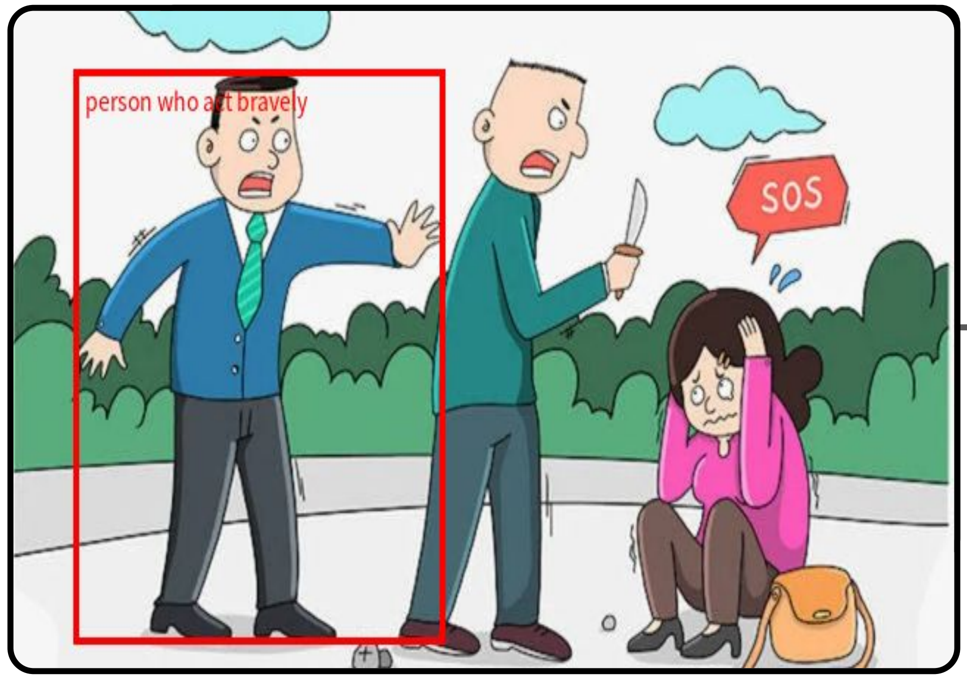
Input

QWEN 2.5 VL

```
[
    {"bbox_2d": [341, 258, 397, 360], "label": "motorcyclist", "sub_label": "not wearing helmat "},
    {"bbox_2d": [212, 332, 274, 448], "label": "motorcyclist", "sub_label": "not wearing helmat "},
    {"bbox_2d": [66, 124, 112, 198], "label": "motorcyclist", "sub_label": "not wearing helmat "},
    {"bbox_2d": [5, 235, 63, 320], "label": "motorcyclist", "sub_label": "wearing helmat "}
]
```

Output

VISION LANGUAGE MODEL



Locate the person who act bravely, report the bbox coordinates in JSON format.

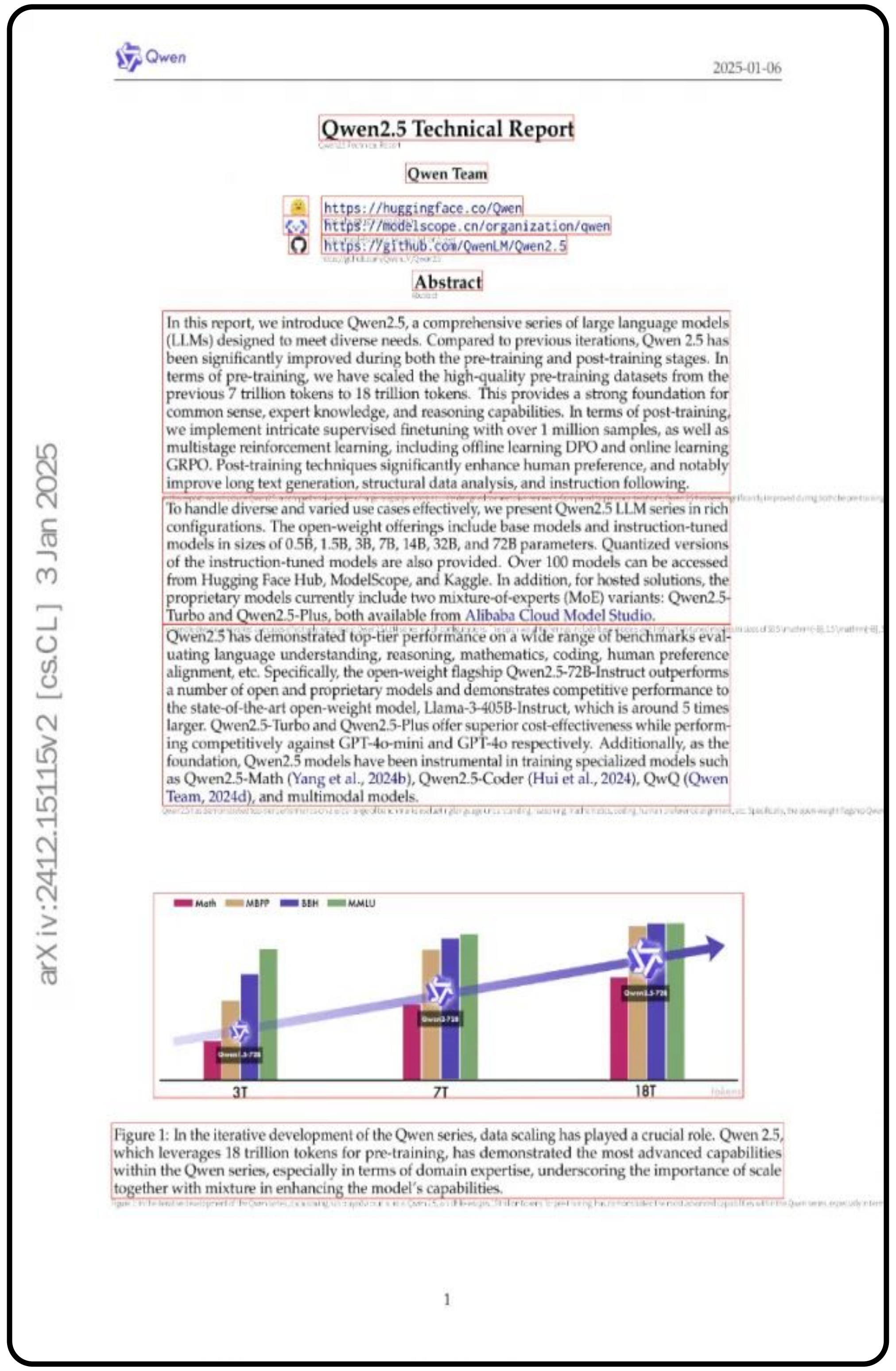
Input

QWEN 2.5 VL

```
[
     {"bbox_2d": [74, 58, 526, 619],
"label": "person who act bravely"}
]
```

Output

DOCUMENT PARSING



arXiv:2412.15115v2 [cs.CL] 3 Jan 2025

Qwen

2025-01-06

Qwen2.5 Technical Report

Qwen Team

https://huggingface.co/Qwen
https://modelscope.cn/organization/qwen
https://github.com/QwenLM/Qwen2.5

Abstract

In this report, we introduce Qwen2.5, a comprehensive series of large language models (LLMs) designed to meet diverse needs. Compared to previous iterations, Qwen 2.5 has been significantly improved during both the pre-training and post-training stages. In terms of pre-training, we have scaled the high-quality pre-training datasets from the previous 7 trillion tokens to 18 trillion tokens. This provides a strong foundation for common sense, expert knowledge, and reasoning capabilities. In terms of post-training, we implement intricate supervised finetuning with over 1 million samples, as well as multistage reinforcement learning, including offline learning DPO and online learning GRPO. Post-training techniques significantly enhance human preference, and notably improve long text generation, structural data analysis, and instruction following.

To handle diverse and varied use cases effectively, we present Qwen2.5 LLM series in rich configurations. The open-weight offerings include base models and instruction-tuned models in sizes of 0.5B, 1.5B, 3B, 7B, 14B, 32B, and 72B parameters. Quantized versions of the instruction-tuned models are also provided. Over 100 models can be accessed from Hugging Face Hub, ModelScope, and Kaggle. In addition, for hosted solutions, the proprietary models currently include two mixture-of-experts (MoE) variants: Qwen2.5-Turbo and Qwen2.5-Plus, both available from Alibaba Cloud Model Studio.

Qwen2.5 has demonstrated top-tier performance on a wide range of benchmarks evaluating language understanding, reasoning, mathematics, coding, human preference alignment, etc. Specifically, the open-weight flagship Qwen2.5-72B-Instruct outperforms a number of open and proprietary models and demonstrates competitive performance to the state-of-the-art open-weight model, Llama-3-405B-Instruct, which is around 5 times larger. Qwen2.5-Turbo and Qwen2.5-Plus offer superior cost-effectiveness while performing competitively against GPT-4o-mini and GPT-4o respectively. Additionally, as the foundation, Qwen2.5 models have been instrumental in training specialized models such as Qwen2.5-Math (Yang et al., 2024b), Qwen2.5-Coder (Hui et al., 2024), QwQ (Qwen Team, 2024d), and multimodal models.

Figure 1: In the iterative development of the Qwen series, data scaling has played a crucial role. Qwen 2.5, which leverages 18 trillion tokens for pre-training, has demonstrated the most advanced capabilities within the Qwen series, especially in terms of domain expertise, underscoring the importance of scale together with mixture in enhancing the model's capabilities.

1

```
<html><body><h1 data-bbox="879 283 1605 348">Qwen2.5
Technical Report</h1><p data-bbox="1124 406 1360 456"></p>

<address class="author"><p>Qwen Team</p></address>

<div class="image" data-bbox="778 491 850 541"><img
data-bbox="778 491 850 541"/></div>

<p data-bbox="885 491 1460
541">https://huggingface.co/Qwen</p>

<div class="image" data-bbox="778 541 850 589"><img
data-bbox="778 541 850 589"/></div>

<p data-bbox="885 541 1708
589">https://modelscope.cn/organization/qwen</p>

<div class="image" data-bbox="792 589 850 639"><img
data-bbox="792 589 850 639"/></div>

<p data-bbox="885 589 1584
639">https://github.com/QwenLM/Qwen2.5</p>

<h2 data-bbox="1143 681 1344 733">Abstract</h2>
```

LONG VIDEO ANALYSIS

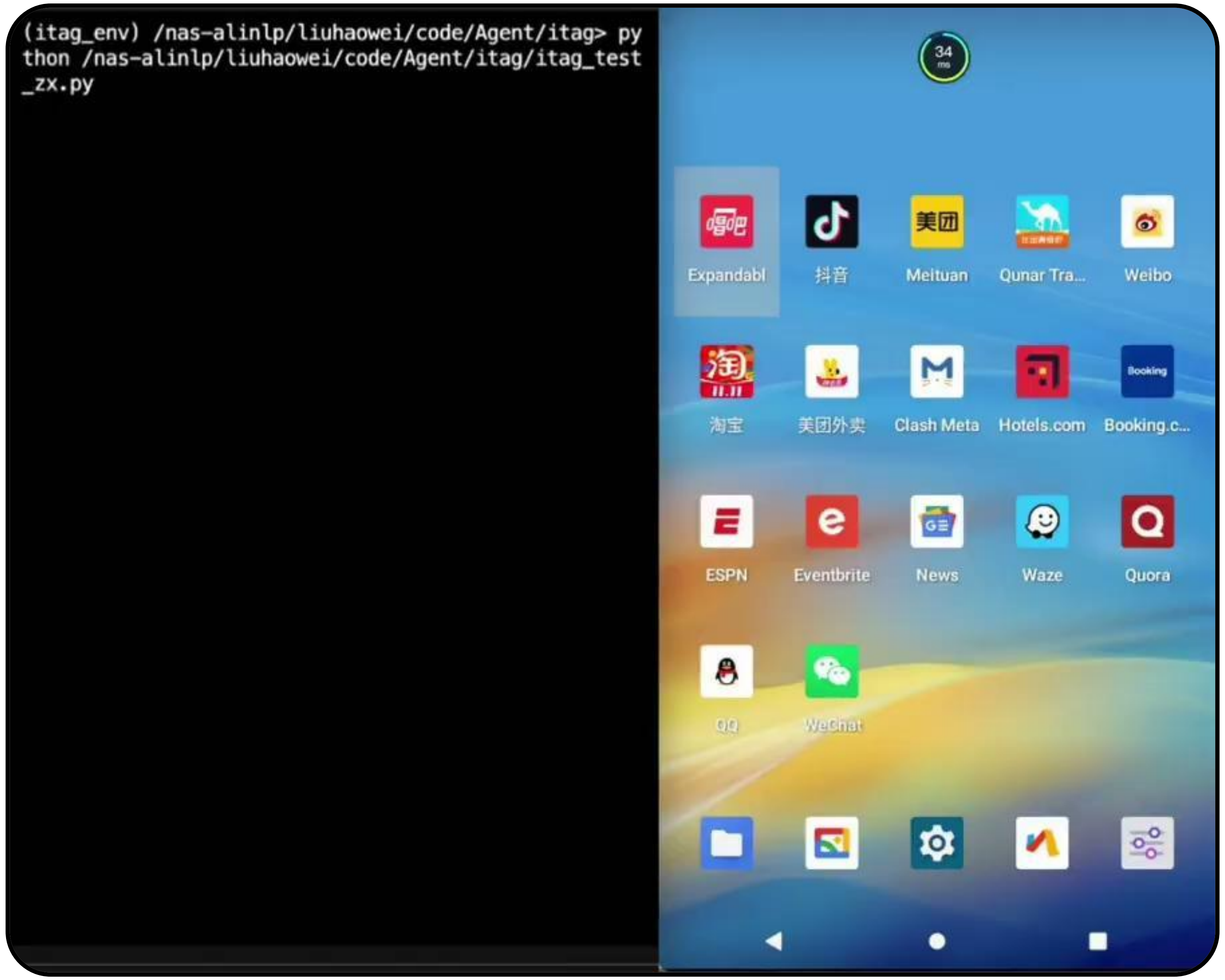
Localize a series of activity events in the video, output the start and end timestamp for each event, and describe each event with sentences. Provide the result in JSON.

Input

```
[
 {
     "start_time": "00:21.00",
     "end_time": "00:49.00",
     "description": "A person removes a piece of meat from its
packaging and cuts off the fat."

   },
   {
     "start_time": "00:50.00",
     "end_time": "01:27.00",
     "description": "The person seasons the meat with salt and
pepper on both sides."
   },

   {
     "start_time": "01:28.00",
     "end_time": "01:36.00",
     "description": "The seasoned meat is placed on a grill."

]
```

Output

AGENT ACTIONS



```
(itag_env) /nas-alinlp/liuhaowei/code/Agent/itag> py
thon /nas-alinlp/liuhaowei/code/Agent/itag/itag_test
_zx.py
```

Please help me book a one-way ticket in the bookings app. The starting point is Chongqing Jiangbei Airport and the ending point is Beijing Capital Airport on January 28th

Usage

Qwen 2.5VL Chat Interface

```
chat_response = client.chat.completions.create(
   model="Qwen/Qwen2.5-VL-7B-Instruct",
   messages=[
      {"role": "system",
       "content": "You are a helpful assistant."
      },
      { "role": "user",
        "content": [
          {
            "type": "image_url",
            "image_url": {"url": "https://example.com/image.png"
          },
          },
          {
                                    "type": "text",
                                    "text": "What is the text in the image?"
                              }
        ],
      },
   ],
)
```

QWEN 2.5VL: ROLE

SYSTEM: Sets global behaviour

```
{
 "role": "system",
 "content": "You are an assistant that answers briefly, returns currency values in USD, "
        + "and uses JSON when a user asks for structured data."
}
```

QWEN 2.5VL: ROLE

USER: Sends an image and text

```
{
 "role": "user",
 "content": [
   { "type": "image",
     "image": "https://example.com/receipt-coffee.jpg" },
   { "type": "text",
     "text": "How much did the latte cost? Please give the answer as JSON." }
 ]
}
```

MODEL CARD

Name	Qwen/Qwen2.5-VL-3B-Instruct
Summary	Multi-modal LLM capable of image, video and tool-augmented chat.
Parameters	3 billion
Release Date	April 2025
Developer	Alibaba Cloud (Qwen team)
License	Qwen license (research/non-commercial); 3 B & 72 B sizes are not Apache 2.0.

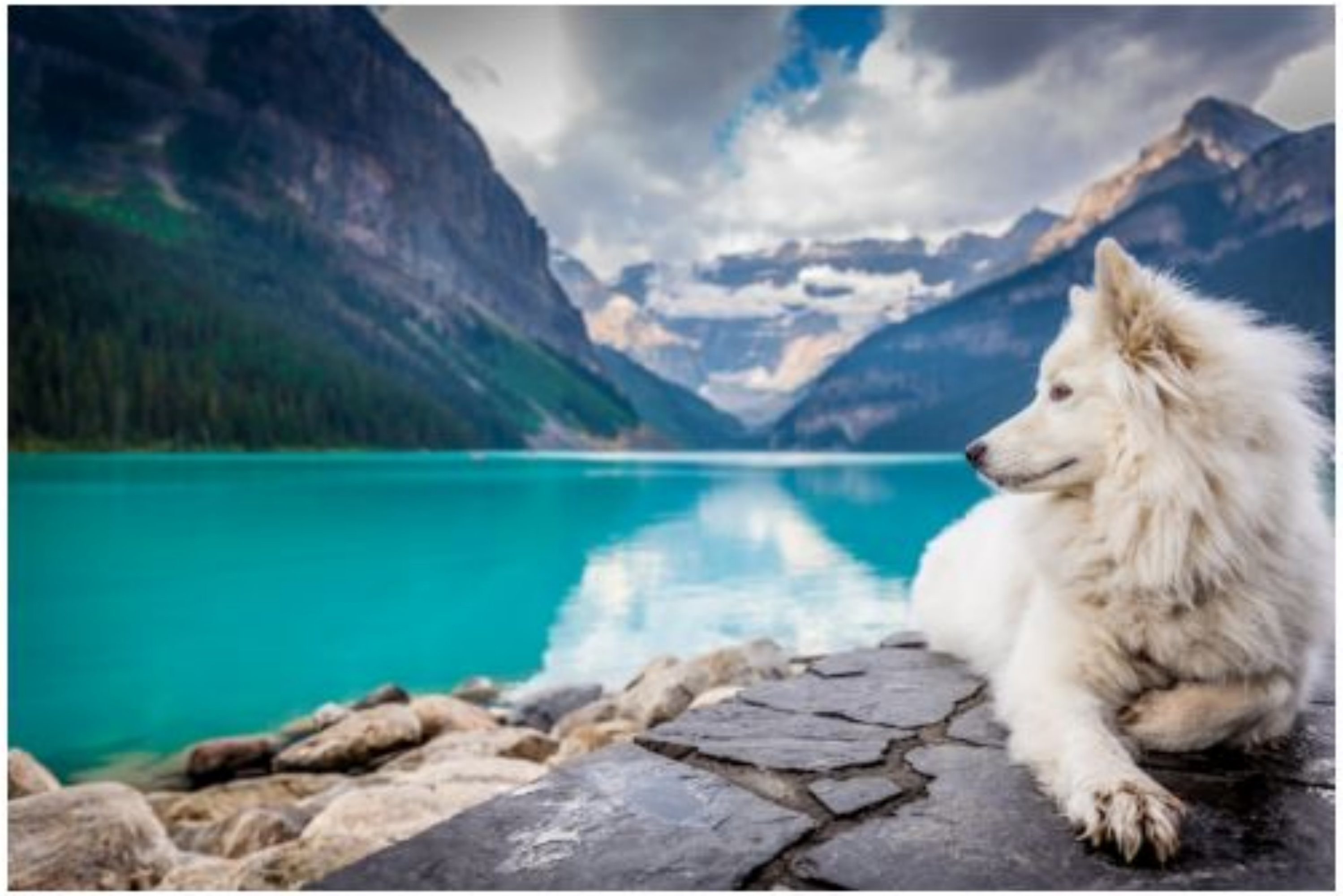
WILL IT FIT?

Model size	Precision	Minimum VRAM needed*	Consumer cards that clear it
Qwen 2.5-VL-3B	8-bit / BF16	3.5 – 7 GB	RTX 3050 (6/8 GB)
Qwen 2.5-VL-7B	8-bit	8 GB	RTX 3070 Ti, RTX 3070, RTX 3060 Ti, RTX 3060, RTX 4060
	BF16	16 GB	RTX 3090, RTX 3090 Ti 24 GB, RTX 4080 SUPER, RTX 4080, RTX 4070 Ti SUPER, RTX 4060 Ti(16 GB)
Qwen 2.5-VL-32B / 72B	Any	≥ 24 GB (32B) / ≥ 80 GB (72B) or multi-GPU	Prosumer/enterprise (RTX 6000 Ada 48 GB, dual 4090s, etc.)

IMAGE CAPTIONING

● ● ● ● ● ● ● ● ● ●

INPUT

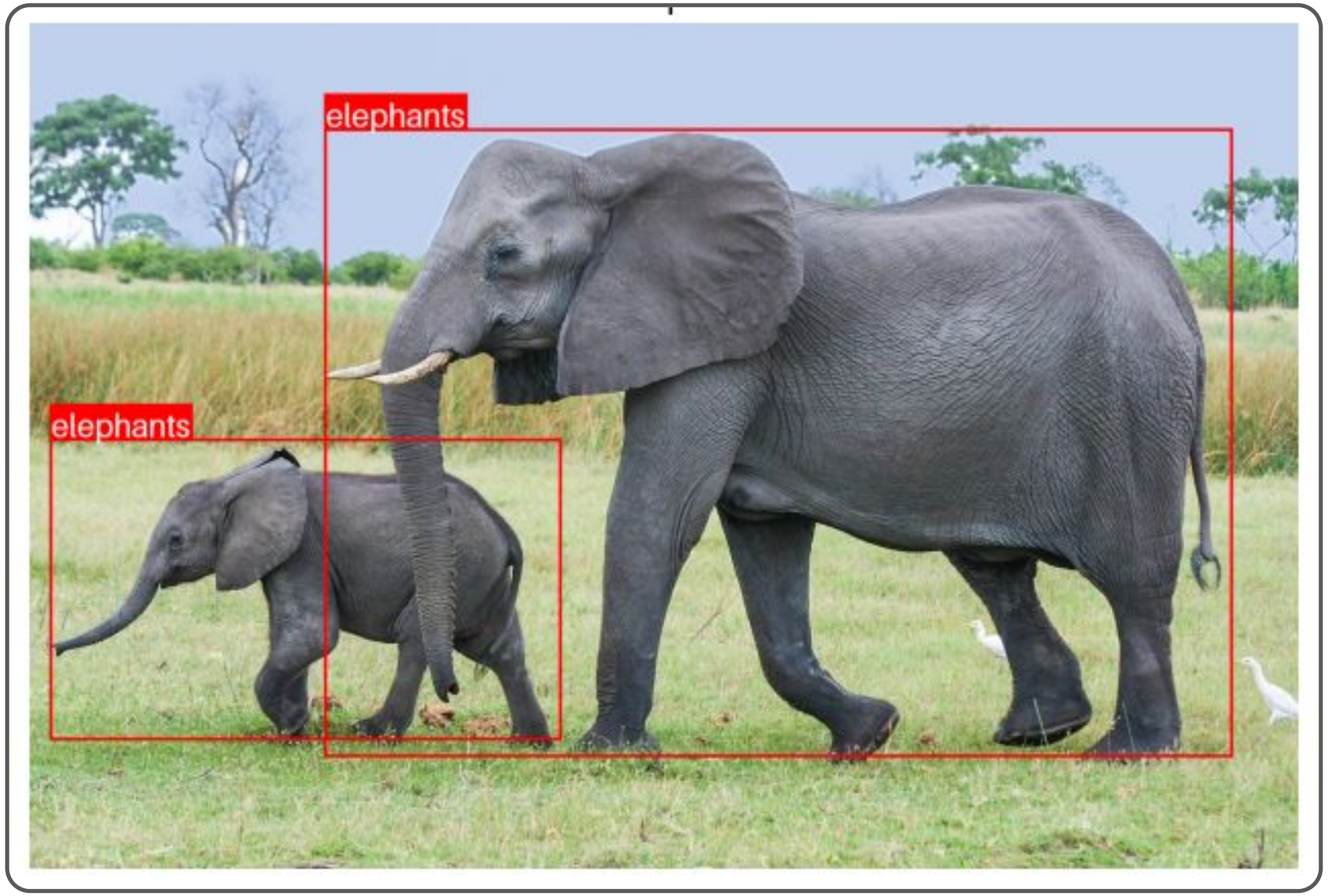


OUTPUT

The image depicts a serene and picturesque scene of a white dog sitting on a stone pathway near a stunning lake. The lake has crystal-clear turquoise water that reflects the surrounding landscape, including the mountains in the background. The mountains are covered with lush greenery, and the sky above is partly cloudy, adding to the tranquil atmosphere

OBJECT DETECTION & SPATIAL REASONING APP

• • • • • • • • • •



Thank You