

Part E — Short Conceptual Questions

1. Why is using a virtual environment recommended?

A virtual environment helps keep project libraries separate from the main system Python. It prevents version conflicts and keeps the project clean and organized. This way, different projects can use different package versions without errors.

2. What is the difference between CPU and GPU computation?

The CPU handles general tasks and processes instructions step by step, while the GPU is designed for parallel processing and can handle many calculations at the same time. That is why GPUs are faster for deep learning and computer vision tasks.

3. Why are pretrained models preferred in this course?

Pretrained models save time and computational resources because they are already trained on large datasets. Instead of training from scratch, we can fine-tune them for our task, which makes development faster and more efficient.

4. What limitations does your system hardware impose?

My system mainly relies on the CPU and has limited RAM and no dedicated GPU, which can slow down training and heavy computations. Due to this limitation, I may need to use smaller models, smaller datasets, or cloud-based resources for complex tasks.