UCloudNet Setup Success Summary (Windows 10 + RTX 4070 + CUDA 12.2)

Environment Setup

1. Installed Miniconda and created a clean Conda environment with Python 3.9:

conda create -n dl_env python=3.9

conda activate dl_env

2. Manually installed CUDA 12.2 Toolkit (developer version) — skipped bundled driver.

3. Downloaded and manually installed cuDNN 8.9:

- Placed cudnn64_8.dll in C:\Program Files\NVIDIA GPU Computing Toolkit\CUDA\v12.2\bin

- Copied header and .lib files to include/ and lib/x64/

4. Verified installation:

- nvcc --version

- Confirmed CUDA_PATH set to v12.2

- paddle.is_compiled_with_cuda() → ■

- Ran dummy tensor on GPU to verify cuDNN

PaddlePaddle GPU Installation

5. Installed correct version:

pip install paddlepaddle-gpu==2.5.2.post112 -f
https://www.paddlepaddle.org.cn/whl/windows/mkl/avx/stable.html

6. Tested model execution — got kernel crashes due to:

- Missing zlibwapi.dll

Fixed Kernel Crash

7. Downloaded zlibwapi.dll and:

- Placed it in C:\Program Files\zlib

- Added that folder to Windows PATH

- Restarted computer

Result: ■ Model + Jupyter notebook runs successfully without crash.

Model Code Upgrade

8. Updated UCloudNet from Paddle 2.2.0 → 2.5.2:

- Replaced deprecated F.sigmoid() with paddle.nn.functional.sigmoid

- Verified all layers and loss functions are compatible

- Successfully loaded model and ran dummy input

Status: Fully working GPU-powered PaddlePaddle setup.

You’re ready to:

- Train / test your cloud detection models
- Push updated code to GitHub
- Add more modules or visualizations