Instructions to configure Windows WSL Ubuntu with CUDA and Anaconda Python:

Note: These instructions assume that the WSL Ubuntu distribution is a fresh install. For other distributions, refer to the official NVIDIA CUDA installation guide https://docs.nvidia.com/cuda/cuda-installation-guide-linux/ .

1. Download the most recent Windows Nvidia CUDA driver from https://developer.nvidia.com/cuda/wsl and install it on your Windows system. You may need to reboot your computer after installation.

2. Open the WSL Ubuntu terminal and upgrade your Ubuntu distribution by typing the following commands:

```
sudo apt update
sudo apt upgrade
sudo apt full-upgrade
```

3. Create a temporary folder (you can delete it after this procedure):

```
mkdir ~/tmp
```

4. Install the CUDA Toolkit:

```
cd ~/tmp
wget https://developer.download.nvidia.com/compute/cuda/repos/wsl-ubuntu/x86_64/cuda-keyring_1.0-1_all.deb
sudo dpkg -i cuda-keyring_1.0-1_all.deb
sudo apt-get update
sudo apt-get -y install cuda
```

5. Test the CUDA installation:

```
cd ~/tmp
git clone https://github.com/NVIDIA/cuda-samples.git
cd ~/tmp/cuda-samples/Samples/1_Utilities/deviceQuery
make
./deviceQuery
```

If no error is reported, the installation is successful.

6. Install the latest version of Anaconda Python distribution:

```
cd ~/tmp
sudo apt install wget
wget https://repo.anaconda.com/archive/Anaconda3-2022.10-Linux-x86_64.sh
shasum -a 256 Anaconda3-2022.10-Linux-x86_64.sh
bash Anaconda3-2022.10-Linux-x86_64.sh
```

Follow the prompts to complete the installation.

7. (Optional) Create an environment for Qiskit:

```
conda create -n qiskit python=3.10
conda activate qiskit
```

8. Install Qiskit:

```
pip install qiskit
```

9. Replace Qiskit Aer with the GPU-supported version:

```
pip uninstall qiskit-aer
pip install qiskit-aer-gpu
```

That's it! You have successfully configured Windows WSL Ubuntu with CUDA and Anaconda Python, and installed Qiskit with GPU support.