

How to enable GPU support with TensorFlow (macOS)

If you are using one of the laptops on loan of the CCI, or have a Macbook of your own with an M1/M2/M3 chip, here is what you can do to make full use of this chip with Tensorflow.

Requirements:

- macOS 12.0 or later
- Python 3.8 or later
- Mac with M1/M2/M3 chip

NOTE:

If you are using one of the CCI laptops, it should already have Anaconda and Python installed. If you are using your personal computer, please follow the steps to install Anaconda and Python from previous posts on the wiki.

Steps:

1. Go to your terminal and create a new virtual environment with

```
conda create -n ENV_NAME python=PYTHON_VERSION -y
```

For this line of code, instead of **ENV_NAME** you can add any other name. Just make sure there is no other environment with the same name by typing `conda env list` in your terminal. That should show you a list with the names of all the other environments that computer has. For the Python version, you can choose any version later than 3.8. For more info about Python versions, see the Python language wiki page.

2. Go into your environment by typing

```
conda ENV_NAME activate
```

3. Check the version of Tensorflow you need before installing it.

- For Tensorflow 2.13 or **LATER**: `python -m pip install tensorflow`
- For Tensorflow 2.12 or **EARLIER** `python -m pip install tensorflow-macos`

4. Now we need to install the tensorflow-metal plug-in, running the line:

```
python -m pip install tensorflow-metal
```

For more info about the metal plug-in for mac, please read: [Apple-Metal](#)

5. After the installation is complete, you can copy and run the next python lines.

```
import tensorflow as tf

print(f"Tensor Flow Version: {tf.__version__}")
print()
print(f"Python {sys.version}")

gpu = len(tf.config.list_physical_devices('GPU'))>0
print("GPU is", "available" if gpu else "NOT AVAILABLE")
```

The output should be the tensorflow and python version you installed, and if everything is correct, the final message will be that the GPU is available

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