

The full tutorial video of this PDF file:

<https://youtu.be/TpuDOsuKIBo>

2071 classification / regularization images of Realistic Vision 2 :

<https://www.patreon.com/posts/realistic-vision-82085317>

The gist file used in the video:

<https://gist.github.com/FurkanGozukara/7c4413ef0eb88c7ad34d6e5ee08f8ca6>

Prerequisites

Full tutorial for python and git installation with venv :

<https://youtu.be/B5U7LJOvH6g>

Full tutorial for how to install and use Stable Diffusion Automatic1111 Web UI:

1 : <https://youtu.be/AZg6vzWHOTA>

2 : <https://youtu.be/aAyvsX-EpG4>

Download and install Visual Studio 2015, 2017, 2019, and 2022 redistributable

https://aka.ms/vs/17/release/vc_redist.x64.exe

Download and install Python 3.10.9

<https://www.python.org/ftp/python/3.10.9/python-3.10.9-amd64.exe>

Download and install git

<https://github.com/git-for-windows/git/releases/download/v2.40.1.windows.1/Git-2.40.1-64-bit.exe>

Kohya SS Gui Repo :

https://github.com/bmaltais/kohya_ss

Realistic Vision V2 model file download link :

<https://civitai.com/api/download/models/29460>

Best VAE file to set as default to generate images :

<https://huggingface.co/stabilityai/sd-vae-ft-mse-original/blob/main/vae-ft-mse-840000-ema-pruned.ckpt>

How to install Kohya SS GUI

Open your C drive or any drive e.g. I will install on F

Open cmd inside your drive

Type below

```
git clone https://github.com/bmaltais/kohya_ss
```

Enter inside downloaded kohya_ss folder

Double click run *setup.bat* file

*Do you want to uninstall previous versions of torch and associated files before installing?
Usefull if you are upgrading from torch 1.12.1 to torch 2.0.0 or if you are downgrading from
torch 2.0.0 to torch 1.12.1.*

Chose option 1 – yes

Torch v2 is supposed work better for RTX 20x0, 30x0, 40x0 cards but I tested and it didn't work better. At the time you are watching this video you can compare performance.

If you have below RTX 20x0 card such as GTX 1080 install torch 1.12

When you are asked

In which compute environment are you running?

Please select a choice using the arrow or number keys, and selecting with enter

Make * is at the This machine – it is by default hit enter

Which type of machine are you using?

Please select a choice using the arrow or number keys, and selecting with enter

** No distributed training – if you have multiple gpu you can use multi gpu but make sure that single gpu working for you and do another installation after that*

Do you want to run your training on CPU only (even if a GPU is available)? [yes/NO]:

Type NO hit enter

Do you wish to optimize your script with torch dynamo?[yes/NO]:

Type NO hit enter

Do you want to use DeepSpeed? [yes/NO]:

Type NO hit enter

What GPU(s) (by id) should be used for training on this machine as a comma-seperated list? [all]:

Type all hit enter.

Do you wish to use FP16 or BF16 (mixed precision)?

Please select a choice using the arrow or number keys, and selecting with enter

Now this one is important. If you get out of memory error then you can use fp16 or bf16 depending on your GPU. Not all GPU supports bf16 so make sure that your GPU is supporting. All RTX 20x0+ supporting as far as I know like RTX 2060

I selected * no since it still should work even with 8 GB VRAM GPUs and half precision such as bf16 or fp16 may reduce your training quality

Then setup.bat window will be automatically closed and setup will be finished.

If you have installed torch 2, you don't need to use CUDNN 8.6 section of the installation.

With torch 2 it already uses CUDNN 8.7

If you have installed torch 2, you can also upgrade xformers to latest version via this way

Open venv activate type

```
pip install xformers==dev
```

It will list you latest development version

As I am preparing this tutorial latest version was `0.0.19.dev516`

Then type `pip install xformers==0.0.19.dev516`

When a new version of kohya ss is published on github repo just run upgrade.bat

To run the gui open a cmd inside installed folder F:\kohya_ss

Run the following command

```
gui.bat --listen 127.0.0.1 --server_port 7860 -inbrowser
```

Source model tab

Download the pruned ckpt into any folder you want and select the model from source model selection. You will see as e.g. : *F:/0 models/v1-5-pruned.ckpt*

Select v2 model if it is v2 512 and select v parameterization if it is 768 model

From model quick pick you can select the model quickly and it will download model into cache or load from cache if it is there

Tools tab

We will use this tab to preprocess and prepare our images

Instance prompt : ohwx

Class prompt man : man

You can generate your classification images via automatic1111 web ui

Folders tab

We will auto set folders tab from tools menu

Instance prompt : ohwx

Class prompt : man

Training images—select the folder where your training images are located.

You can use utilities > captioning to preprocess and caption them if you wish

But I don't suggest captioning for teaching a person or a style

Set repeats count to 40. This is working best for teaching a person. If you use too many training images then you need to reduce this to be able to save with more frequent epochs

Image folder like this

```
F:/kohya training video/img
```

Set Regularisation images folder

For man class token and realistic vision 2 you can use my pre trained images :
<https://www.patreon.com/posts/realistic-vision-82085317>

Training parameters

Select standard lora

Network rank 128 network alpha 1 – these 2 are best settings and you don't need anything else other than training epoch count and checkpoint saving frequency

All other settings are default

How to decide number of training epochs? If you make repeat count like 40, then train up to 20 epochs and save every epoch. If you have too many training images, you can reduce repeat count.

Lets say you have 100 images to teach a style, then you can make repeat count 10 or even 5.

If you have like 10 training images to teach yourself, you can make repeat count 50

Because repeat count will increase your training step count. 50 repeat count means that 1 epoch is actually 50 epoch of SD web UI DreamBooth training.

If you want to start another instance of Kohya SS that uses your second GPU

Open cmd window run below command and restart your Kohya

```
setx CUDA_VISIBLE_DEVICES 1
```

This command will be effective permanently system wide until you run again below command to set all

```
setx CUDA_VISIBLE_DEVICES 0,1
```

So start 1 instance with device 0 and start another 1. They will be effective until you close active cmd windows

Join discord and ask me any questions you want :

<https://discord.com/servers/software-engineering-courses-secourses-772774097734074388>

