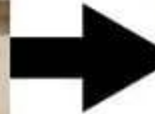# GENERATOR HACKATHON

CLOTHING IMAGE GENERATOR USING STABLE DIFFUSION PIPELINE

CLOTHING IMAGE

- **Step 1: Preparing the Environment**
- Before we dive into generating and refining images, it's essential to set up our environment with the necessary tools and models. This includes downloading the Realistic Vision Stable Diffusion model and installing required libraries.
- **1. Download the Stable Diffusion realistic vision model from civitai**
- civitai is slowly but surely becoming the hub for stable diffusion models and generations. for the purpose of our tutorial i have chosen realistic vision model as it's generations are usually of real people which makes it fit our objective more slowly. below is a bash command to download our model directly to our work environment.
- wget https://civitai.com/api/download/models/245598?type=Model -O /workspace/realisticVisionV60B1_v60B1VAE.safetensorsThis will download the model to "/workspace/" directory.
- **2. Set Up Necessary Libraries**
- For the purpose of this tutorial the following libraries will be used:
- huggingface-cloth-segmentation
- CodeFormer
- Moreover, a custom inpaint model was used for better modeifications. to run them it is sufficient to copy & paste the following bash command into your working environment.
- pip install --upgrade diffusers[torch] accelerate transformers omegaconf Pillow
  git clone https://github.com/wildoctopus/huggingface-cloth-segmentation.git
  cd huggingface-cloth-segmentation
  pip install -r requirements.txt
  cd ..
  git clone https://github.com/sczhou/CodeFormer
  cd CodeFormer
  pip install -r requirements.txt
  python basicsr/setup.py develop
  pip install dlib
  wget https://civitai.com/api/download/models/245598?type=Model&format=SafeTensor&size=pruned&fp=fp16 -O /workspace/Perfect! We are all set with all the libraries downloaded and installed! now let's move to the generation steps.

- **Step 3: Segmenting the Image for Inpainting**
- After generating our image, the next crucial step is to segment it. This process involves creating a mask of the area we want to modify, which will be essential for the inpainting phase.
- **3.1 Run the Segmentation Process**
- To segment the image, we'll use the 'huggingface-cloth-segmentation' tool. This tool will process our generated image and save the segmented version as "final_seg.png".
- Run the following command to perform the segmentation:
- python /workspace/huggingface-cloth-segmentation/process.py --image "/workspace/input_0.png" --cuda We notice that the segmented image "final_seg.png" are now being saved into "/workspace/CodeFormer/output/cloth_seg/final_seg.png"" We note this as we will be using it in further steps let's check our segmentation.
-

The mask seems to cover the dress really well (even ignoring the hand) However, it seems that the segmentation is not in Black & White. Which inpaint uses to recognize different objects so let's turn the mask into B&W!

3.1 Make the segmentation into black and white

To make the segmentation Black and White it suffices to run the following cell.

- **Step 4: Applying the Mask for Clothing Change with In-painting**
- Now that we have our segmented image, the next step is to use in-painting to apply this mask to the original image. This will allow us to modify the clothing in the image with new designs or styles.
- Maybe we would like to see her wearing another dress. a "red dress with flowers" might be an interesting idea! let's run our inpainting pipeline.