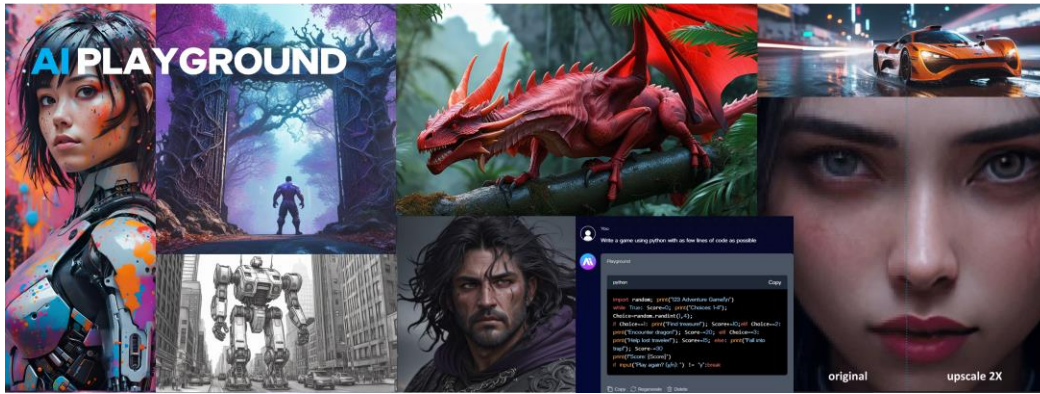# AI Playground Users Guide. v.1.21b

Welcome to AI Playground v.1.21 beta, an AI PC starter app for doing AI image creation, image stylizing, and chatbot on a PC powered by Intel® Core™ Ultra* or Intel Arc™ GPU.

Quick Links

Min Specs and Installation

AI Playground is currently available as a packaged installer, or available as a source code from our Github repository. To run AI Playground you must have a PC that meets the following specifications

- Windows OS
- Intel Core Ultra-H processor, Intel Core Ultra 200V series processors OR Intel Arc GPU (discrete) with 8GB of vRAM

Packaged Installer: AI Playground has multiple packaged installers, each specific to the hardware. Choose the correct installer (**Intel Core Ultra-H**, **Intel Core Ultra 200V**. or **Intel Arc GPU discrete**). Download to your PC then run the installer. The installer will have two phases. It will first install components and environment from the installer. The second phase will pull in components from their source. **This second phase of installation will take several minutes and require a steady internet connection.**

Before You Start

AI Playground is intended as a starter app for a broad set of AI workloads, making the experience easy and flexible for both novices and advanced users. Here is information to assist you before you get started.

Intel Core Ultra-H Recommendation: For the best experience on these mobile system, we recommend users first use **Standard** resolution mode in either **Standard** or **Fast** quality settings for the best experience. HD mode is available as well, but will generate images with 4 times the pixels and take significantly longer to generate. Read the **Tips and Techniques** section to learn how to improve the speed of image generation.

AI Models and Resolutions: AI Playground supports three modes for image Generation: **Standard**, **HD** and **Manual**. The **Standard** and **HD** modes are tied to two types of models; Standard for models trained at 512x512 resolution (**Stable Diffusion 1.5 models**) and HD for models trained at 1024x1024 (**SDXL models**). AI Playground will automatically sets the right resolution parameters settings for mode and model settings. Standard mode should be for images at 512 x512 adjusting either dimension by 256 pixels in either direction and HD or SDXL models should be for images at 1024x1024 adjusting either dimension by 256 in either direction. Using a resolution that is outside of these parameters may result in lower quality and distorted images.

Getting Started

Installing Models: AI Playground **does not ship with Generative AI models**, however we have made the model process easy, and flexible for you to download and install models for any function of AI Playground. Three methods for downloading and working with models

1) **Automated Downloads**: When you first run any task on AI Playground requiring a model, that is not present, AI Playground will provide the option to download a model for that task. To download you must first visit the site for the model, then confirm you acknowledge the terms of use for the model. After download the process to run the task will continue. Alternatively, you can cancel and install a model of your choice. See **Manual Download**

2) **Download from Model Settings**: Before you run a task that requires a model, you can review a list of models to use in AI Playground. Models from the **Models Settings** under the Settings gear icon. See **Models Settings** section for details

3) **BYO Model:** You can also choose to bring your own model, and move models into the models folders where the AI Playground app is stored. See the **Model Paths** feature under **Models Settings** section of this document to know where these folders are.
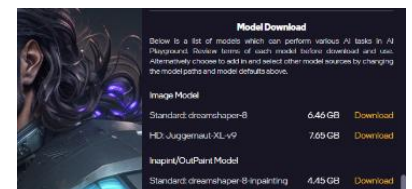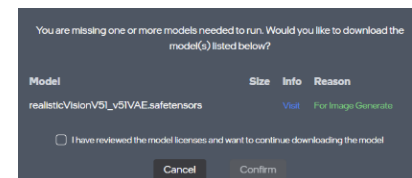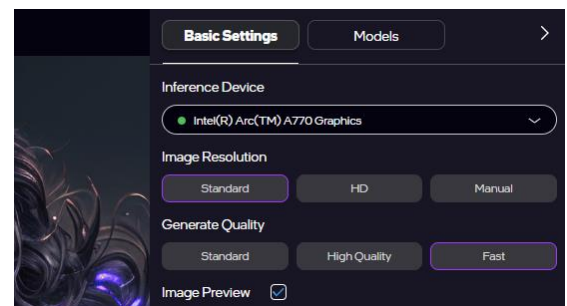
User Interface Overview:

Create Tab: Create allows you to generate up to 4 images using a text prompt to guide generation of images. Additional settings are available in the Settings menu under the gear.
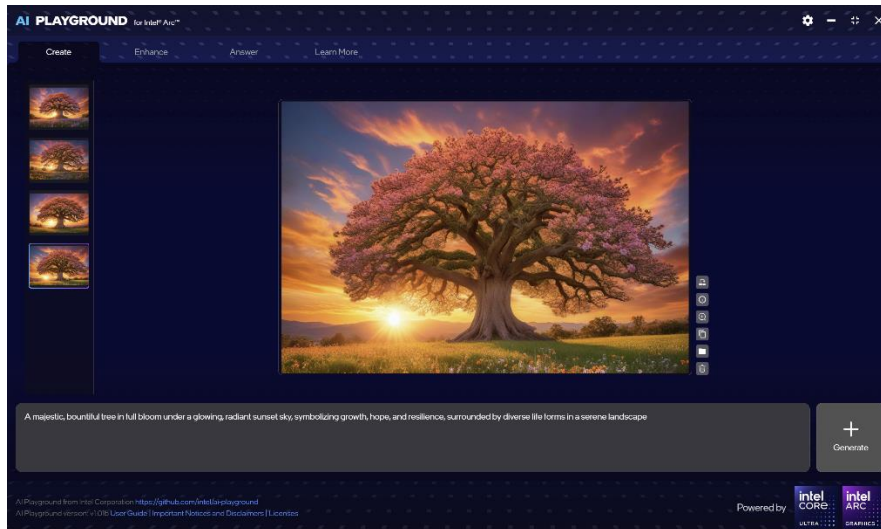

- **Prompt and Generate**: The text prompt and the generate button are the only actions required to generate an image for Create. By default, AI Playground will generate an image on in **Standard Resolution** and **Standard Quality** (See **Image Workflow** section for details) Once an image starts to generate, the Generate button will change to "**Stop**", allowing you to cancel that generation process.
  *See the **Image Workflow** section to know how to configure settings and options for greater control and output in the Create Tab*

- **Image selector:** An image selector is available on the left side of the tab. Click on any of the thumbnail images to preview that image in the viewport

- **Viewport icons:**

  - Enhance: Click this button to copy this image to the Enhance tab, for further creation, editing, and enhancements
  - Info: Gives you information on the prompt, model, and settings used to create this image
  - Zoom: Opens the image up in the Photo Viewer application
  - Copy: Copies the image to the clipboard
  - Folder: Opens the Folder where the image is stored and saved
    Delete: Deletes the image from the viewport

Enhance Tab: Enhance allows you to alter, stylize, upscale and edit images you create in AI Playground or images from your own computer. Either upload an image to this tab or send an image from Create to the Enhance tab using the Enhance Icon.

- **Upscale**: You can upscale an image either 1.5X or 2X its original resolution. The variance slider allows you to add creativity to the upscale process. Type information in the prompt on how you'd like add variance to the image potentially adding in more detail or other elements when upscaled.
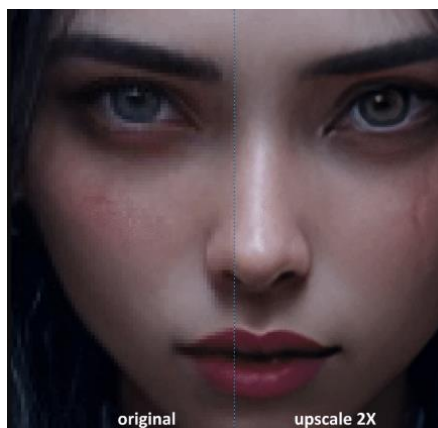
- **Image Prompt**: The image tab allows you to stylize images you have added to this tab. Type in a prompt, describing how you want to stylize the image, then adjust the influence slider on how much the image will look like the original (lower value) or how much it will be guided by the prompt (higher value)


| input image | generated image from prompt |

- **Inpainting**: Here, you can mask parts of the image and fill that area either with something new or you can redo or fix that portion. Use the prompt to define what will be put in the filled area and adjust the slider for how much influence the fill should have.

| face masked | face filled using prompt |

- **Outpaint**: Expand your image in any direction using information you describe in your prompt

Answer Tab: The Answer Tab is a comprehensive chatbot. Choose a model to use and ask it generalized questions, ask it to help you write something creative or upload your own text files to have them summarized or to search for specific information.
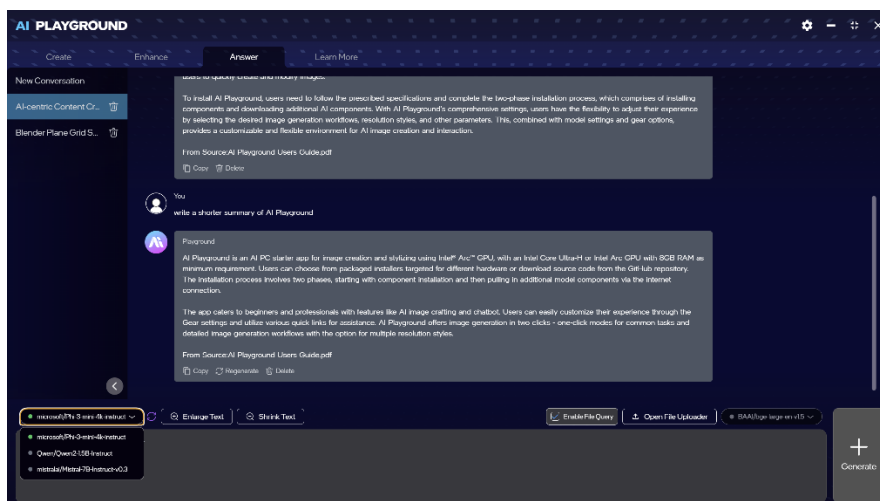
- **Prompt and Generate**: Type in a question then click generate and the AI Chat will provide an answer. *(note accuracy of these answers will depend on the model used. Check for documentation on the specific model to learn more)*

- **Conversation Manager:** (New in v1.21) Save and restore chat conversations

- **Regenerate Icon**: Click this icon to ask the same question

- **Delete**: Delete will remove the question and also remove the discussion from the AI memory and discussion

- **Clear Chat History**: Will clear all of the discussion and remove the discussion from the AI memory

- **Model**: Select from multiple LLM AI model to use in your chat session. Items with a green icon are installed and ready to use. Other items can be used but will download before use. (note in this version models need to support Transformers 4.39 – this may change in future versions)

- **Enlarge or Shrink Text:** (New in v1.21) adjust the size of the fonts displayed in the chat session up or down using these buttons

- **Enable Files**: Turn on to have the chat session use information you've uploaded during the chat session

- **Open File Uploader**: Upload a ".txt" file to be used as data for he chat. When added you can ask questions about the contents from these files.   You can add or remove multiple files from its memory. You can have the chatbot ignore these files by unchecking the Enable File option

Learn More: We have more resources to support you, using your Intel Arc GPU for AI. Join our community of AI Playground users, follow our content, try other amazing WebUI tools, or get engaged on our GitHub and help us build on AI Playground

Gear – Settings: Here you can adjust settings to guide your output or customize how AI Playground works. See the **next section** and **Model Settings** section for details

Image Generation Workflows & Settings

One Click Modes: We've made AI Playground easy to switch between common tasks without needing to know about AI image generation. You'll find options for these workflows under the Gear icon in Basic Settings
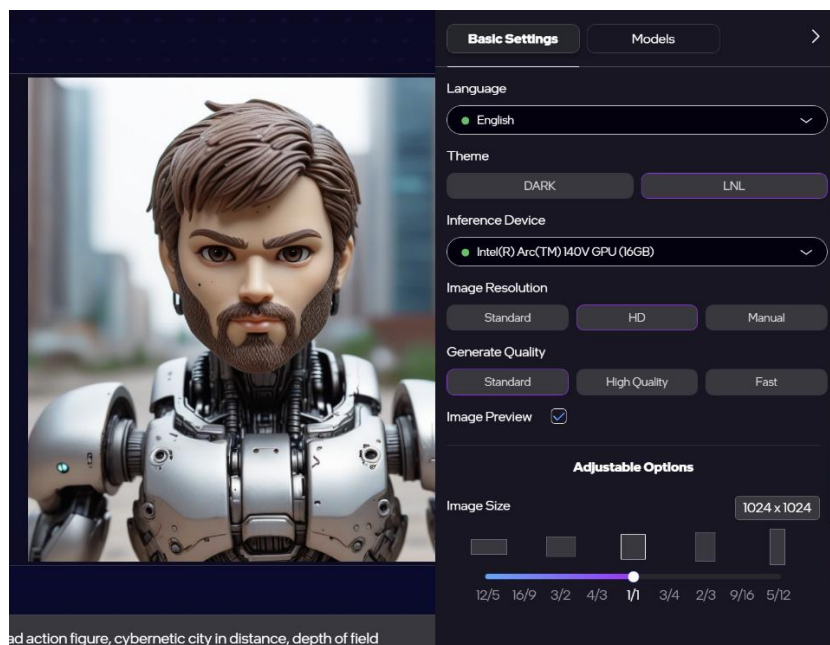
Resolution Modes:

Standard: Switch to Standard Mode to generate images at roughly 512x512 resolution, using **Stable Diffusion1.5 checkpoint models**

HD: Switch to HD Mode, to generate images and use models at roughly 1024x1024 resolution using **SDXL checkpoint models**. Note this will increase pixel count 4x, so expect the time to do this to be 4 times longer.

Ultra: Switch to Ultra Mode to generate HD level images but with finer control, describing where things should be placed, what color they should be, including specific text in the scene using a **Stable Diffusion 3 Checkpoint**

Manual: See manual section. This option ignores the defaults and allows you to manually change any of the image generation parameters.

Quality Modes:

Standard: Set this mode when you want standard quality, which will take 20 steps to generate

High Quality: Set this mode when you want to increase the quality and details of your output, to 50 steps

Fast: Set this mode to increase the speed output, (using LCM). This will produce images potentially 5 times faster than Standard, but you will notice less details in the image

Adjustable Settings: The following are adjustable settings withing the One Click Modes.

Image Preview: Image preview is on by default and allows you to see the image as it is being created. You can turn this off which may produce images faster.

Image Size: New in v1.21b is an update image size tool, that now allows you to select aspect between 9 aspect ratio and resolutions determined by the Resolution Mode: Standard will set a min res of 320 and high of 768. HD mode will set a min res of 640 and high of 1536

Steps: Steps will automatically be set to 20 on Standard or 50 for High Quality, however you can adjust that number from 1 to 50

Number of images: You can set the number of images to generate from 1 to 4

Seed: By default, this value is set to –1, which means it will be a random value, meaning the output will be random. If you choose to put in a specific seed number, you enter it and that settings will hold the number in the settings. Each image count past the first image will be the seed of the last image +1

Negative Prompt: Use negative prompt to add terms and words that describe what should not be in the image. Any changes here will hold and be used on the next set of images.

SafetyChecker: By default Safety Checker is on. If an image is sensitive and unsafe it will result in a solid black image. You can choose to disable this feature if desired

Manual Settings: This option allows you to fine tune your settings for the following:

Checkpoint Models: Select a model from the list of installed models, in the defined Checkpoint folder. If you have recently downloaded a model to this director, click the refresh button to see it. If selecting a Stable Diffusion 1.5 model you must set resolution to no more than 768x768 otherwise you will get poor image results
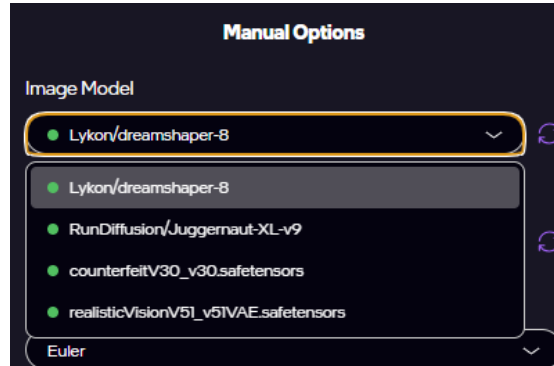
Inpaint/Outpaint Models: Here you can select a specific Inpaint model to use for the inpaint/outpaint features.

Width / Height: In manual mode you can set your own resolution, and are not restricted to the preset ratios, but be certain your resolution is divisible by 8 and appropriate for the model you are using

Scheduler: Schedulers can achieve different results and some schedulers are best used for some specific checkpoints. Check documentation on the model you are using to know the best Schedulers to use

LoRas: By default AI Playground will suggest LCM LoRas to download, however you can also choose to use LoRas that guide the style and quality of your output. However in the current version of AI Playground you cannot use more than one LoRa at a time

CFG: Set this to guide the image generation to be more creative – lower number or more adhered to your prompt – higher number. Check documentation on the model you are selecting to know the best CFG values

Model Settings: This is where you fine tune information and control how you work with Models in AI Playground. We suggest you proceed with caution on changing any settings as it incorrect changes could result in the app not functioning as intended

- **API Token:** New to v1.21b is the API token setting, which allows you to input your HuggingFace user access token. This will be used to confirm with HuggingFace you have permissions and access to any restricted use models.

- **Model Paths**: By default we have established specific folders where models for various functions are located for AI Playground. You can choose to change these locations if you have another folder where you are storing models. However we warn that changing this folder could results in the app failing if done incorrectly. Proceed with caution

- **Default Models**: use this to change the defaults model used by AI Playground. This will change what models are used for Standard vs HD quality settings in the One Click Modes. Proceed with caution and reset to installation defaults if you have problems after changing these settings

- **Install Models**: Models for all the various functions are listed here and available for download from this section of AI Playground. By downloading here, you can avoid the automated prompts to download models

Installing Other Models:

A key feature of AI Playground is the ability to use other models.

Example Outputs using different Checkpoint Models

Lykon/dreamshaper-8	realisticVisionV51_v51VAE.safetensors	counterfeitV30_v30.safetensors

Prompt: close up of an adorable anime bobble head character, detailed eyes, animated film, atomic space age hero, excited, open mouth, swanky, cute, funny, brown hair, wide angle, action pose, fantastic landscape, rocket, red, gold, space, planets purple glow
Seed: 3027545586   **Scheduler**: Euler

Where to find models: These websites host models you can models and use in AI Playground.

- **Huggingface**: Huggingface is a website that hosts AI models for both AI chat and image generation. You can search huggingface for specific types of models or if you have a model ID you can use that to find a model. https://huggingface.co/
  For LLM models, AI Playground v1.21b current supports PyTorch models supporting Transformers 4.39.

- **CivitAI**: CivitAI is a website with community defined and refined models for image generation. Here you can find models that are fine tuned to create outputs for specific styles – illustration, photography, anime, game design, architecture, etc. You will find models that work in AI Playground such as checkpoints for Stable Diffusion 1.5 (our standard mode), SDXL (our HD mode), LoRAs used to stylize or adhere output to a specific feature, Inpainting models and more. https://civitai.com/models

Where to put models: Making use of models from Huggingface or CivitAI is as simple as putting them in the right folder. In the destination folder you installed AI Playground, there is a models folder which and that folder describes where to put models of certain types. Simply download models and place them in the appropriate folder for their model type. Model types are as follows:

- **Checkpoints**. Checkpoints are the primary Stable Diffusion models used to create an image. You can download either Stable Diffusion 1.5 models or SDXL models and put them into the Checkpoints folder. When using SD 1.5 model make your images around 512x512 resolution. When using SDXL models keep those images around 1024x1024 resolution.

- **LoRas**. LoRas are models that allow you to customize the output for a specific look or style.

- **Inpaint**: Inpaint models are for helping the inpaint and outpaint more effectively fill and blend content into your masked or outpainted areas

- **LLMs**: LLM folder is located in the Models LLM location. These are models for doing AI Chat. You can find these on Huggingface. Some of these models require you register and have a signed key in order to run on your computer

- **Embedding:** Embedding models allow you to upload text content from your PC to the AI chatbot, where you can summarize, search and get answers on that content

Tips and Techniques

Faster Image Generation: You have many options in AI Playground to create images of various resolution and quality. You may find that you are generating dozens of images to get to a good image you like but the time to generate a good composition and look take too long. Here are tips to generate images faster while achieving high quality

- **Turn off Image Preview:** Image Preview is a convenient feature for seeing the progression of an image but it does take an additional compute cycle to decode the image diffusion and display images. Turning this off can speed up your image generation

- **Switch to Fast Mode:** Fast mode used a model called Latent Consistency Model, and it will generate images in 1/5 the steps. It is a fantastic way to get faster images that look nearly as good as Standard quality

- **Inpaint then Upscale Fast Mode images:** Fast mode can generate a lot of images very fast. However you may find that details are lacking or facial features are not ideal.
  - Generate a set of images in Fast mode
  - Move the best images from create to Enhance.
  - Use the Inpaint feature to redo or replace parts of an image to get the detail you need.
  - Select the best image, send that image to Enhance

- Switch to the Upscale tab. Upscale that image 2X and you have a detailed image. From there you can consider inpainting again using either Standard or HD mode for the inpaint
- **Image Prompt Fast Mode Images:** As said above, Fast mode can allow you to iterate and generate many various quickly.
  - Generate images
  - Select the best image then click Send to Enhance
  - Select the Image Prompt tab.
  - Rewrite your prompt from Create but make some changes describing what you want improved.
  - Go to settings and **switch to Standard quality**
  - Generate images to see if you can get more detail out (adjust the influence as needed)
- **Upscale Fast Mode Images:** Like the two examples above use Fast mode to get to images that are close to the end result you desire.
  - Send selected image to Enhance
  - Select the Upscale tab.
  - Paste in your prompt from the Create Tab. Change the Quality Settings mode from Fast To Standard.
  - Adjust the variation from .25 to .55 to get new images with some variation in details of that image
- **Inpaint After Upscale for High Quality:** Using Standard mode will allow you to generate more images faster than HD mode.
  - Select an image fron Standard mode and send that picture to Enhance.
  - Go to Upscale tab and upscale the image 2X with zero variation.
  - Send this image to Enhance and switch to Inpaint Tab
  - Change the Res mode to HD
  - Mask areas you want to improve
  - Describe the area to improve and generate

Better Prompts: Generating good images is often mostly influenced by your prompts. Try these techniques to improve your image generation.

- **Use Answer to Generate Prompts:** Switch the Answer Tab and ask the AI Chat bot to write a stable diffusion prompt to generate as type of picture. It will respond with a prompt. Copy and paste that into generate. You can use the regenerate button in Answer to come up with variations of the prompt
- **Use the Negative Prompt:** Use the Negative prompt field under Settings, to describe things you do not want in your image
- **Regenerate Using the Same Seed:** If you found an image that is close to what you want but something is off. Follow these steps.
  - Select the image then click the Info icon
  - Copy the seed value
  - Go to the settings and paste in that seed value
  - Regenerate to confirm you are getting the same image.
  - Adjust a few words in the prompt to see how the image changes. Repeat until your prompt is driving the image in the right direction

Model Index

AI Playground v1.21b provides download access to the following models, from either the model settings area or directly from feature that requires a model. You are not restricted to these models, and can download image checkpoint models from Civitai.com or LLM models from Huggingface.co

Model	Use	License & Model Card Links
Dreamshaper 8 Model	Create Standard	license | site
Dreamshaper 8 Inpainting Model	Enhance Inpaint - Standard	license | site
JuggernautXL v9 Model	Create and Enhance HD	license | site
Phi3-mini-4k-instruct	Answer Model	license | site
Qwen2-1.5B-Instruct	Answer Model	license | site
Mistral-7B-Instruct-v0.3	Answer Model	license | site
bge-large-en-v1.5	Answer Embedding	license | site
Latent Consistency Model (LCM) LoRa: SD1.5	Create Standard Fast (LoRa)	license | site
Latent Consistency Model (LCM) LoRa:SDXL	Create HD Fast (LoRa)	license | site