



A Web Application to create or Enhance Art

# ARTISTRY

# INTRODUCTION

- My name is Saikat Mukherjee. I am a software developer currently working in Amazon.
- I Completed my Bachelor's from RCC Institute of Information Technology in India in 2016 and worked for 4 years in Tata Consultancy Services. I came to US in 2021 to Pursue Masters degree
- I completed my Masters in Robotics from Arizona State University in 2022 and joined Amazon in Bellevue, Washington.
- I am a self-taught Machine Learning Engineer who doesn't have traditional work experience in this field.
- I built ML/DL models using TensorFlow to detect object in live video stream, developed models to classify Images and Texts
- Currently I am building apps using Generative Machine Learning APIs from Open AI and more.

# PROBLEM STATEMENT

What if, you have an app that can assist you to create new characters based on your instructions and you can use those characters tell story?

What if, you can use your existing painting/pictures and enhance them based on your requirements.

What if, You can create a story line by creating images one by one and publish them as a one single image.

What if, you can ask an intelligent AI assistant to make a prompt for you being adhered to your requirement/or story line for a particular story and use that prompt to generate images.

What if, you can have all of them in one place.



# SOLUTION

- I have built a Web application that can take prompts from user and create images based on them. But more importantly the user can create different types of images for the same prompt using different style template. Implemented using Text-To-Image API from **Stability.ai**
- If the user wants to enhance his/her own painting or sketch. He/She can do that too!!! Just need to upload the image and provide the instruction regarding how he/she wants to modify the image. Implemented using Image-To-Image API from **Stability.ai**
- Cannot come up with a prompt that can explain the image you want to create. No problem, The user can ask an AI assistant explaining the scene or how the picture he/she wants to look like. Implemented using GPT-3.5-Turbo API from **Open AI**
- Ultimately, whether it's a single picture that you worked on or series of images that explains your story board, the user can download each one of them, if you want. The icing on the cake is, the user can stitch all the images and **Publish** them as an album.

# TECHNICAL DETAILS

- Used ReactJs to create the web app.
- Used Text-To-Image API & Image-To-Image API from *Stability.ai*
- Used ChatGPT GPT3.5 API for Prompt assistance.

## Future Work

- The App can be further enhanced by making it driven by voice command.
- Previous Text prompt and Images can be stores in a database like Redis, so that future search process can be more personalized and Faster
- Making the Application Multilingual for voice Commands.
- Image Masking and Image Upscaling can be added to increase the offerings of the app

# BUSINESS MODEL

- The App can be monetized based usage. For Example to First 5-10 images or search query will be free. But after that it will pay per use.
- Subscription can be suggested based on how frequently a user uses the app or how many time in certain period of time the user is coming back to the app.
- Downloading each images will be included in the prize. But in order to publish them the user will have to pay separately
- Certain style templates will not be free to use from the beginning.