GEN AI - IMAGE RESIZERS

Team

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   SCOPE & SENSE

Date: 24 Sep 2024

GenAI | Image Resizers

SAMSUNG

Problem Statement

Context

GenAI image generation models are good at generating images in trained resolution (For example 1024*1024). However, this limitation is not desirable in real life situation where we need to have images in different resolutions.
Another aspect is generally images generated are in square format which is not suitable for usage on mobile or laptop having rectangle format predominant.

Statement

Resizers and auto-upscalers (2X, 4X) for the images. Change to landscape and portrait.

Worklet Details

Duration (Months)	Members Count	Mentors
6	4	Gokul Nair +91-9496059290 gokul.gn@samsung.com

Pre-Requisite

- https://openmodeldb.info/
- https://paperswithcode.com/task/image-super-resolution

Expectations

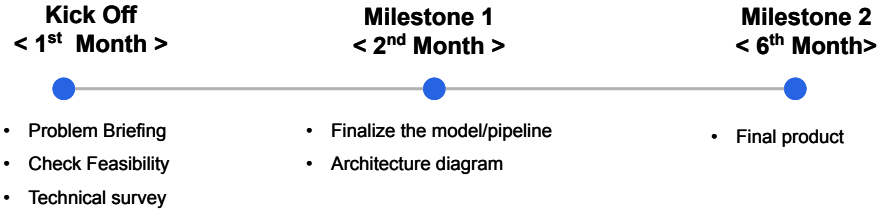
Undertaken Tasks

- Conduct Literature survey
- Identify the suitable framework
- Build a framework for image resizing and upscaling

KPI

- Web application with simple UI. ComfyUI is preferred.
- It should seamlessly integrate with the backend GenAI models. SDXL etc.
- Latency should be <10 seconds
- Original image contents should remain constant.
- No visible drop in image quality.

Timeline



Complexity

Work-let Name: **GenAI Image Resizers**

Worklet Details

1. Worklet ID: 24GAI15VITC
2. College Name: Vellore Institute of Technology Chennai

KPIs achieved till now

- Original image contents should remain constant.
- No visible drop in image quality.

Issues faced

- Artifact distortion and noise generation.

Next Steps

- Frontend application for upscaling and perform landscape to portrait conversion.
- Web application with simple UI that seamlessly integrates with the backend GenAI models.

Key Achievements/ Outcome till now

- Identified best performing model.
- Successfully upscaled low-resolution images.
- Successfully completed and achieved results for image conversion from landscape to portrait and vice versa.

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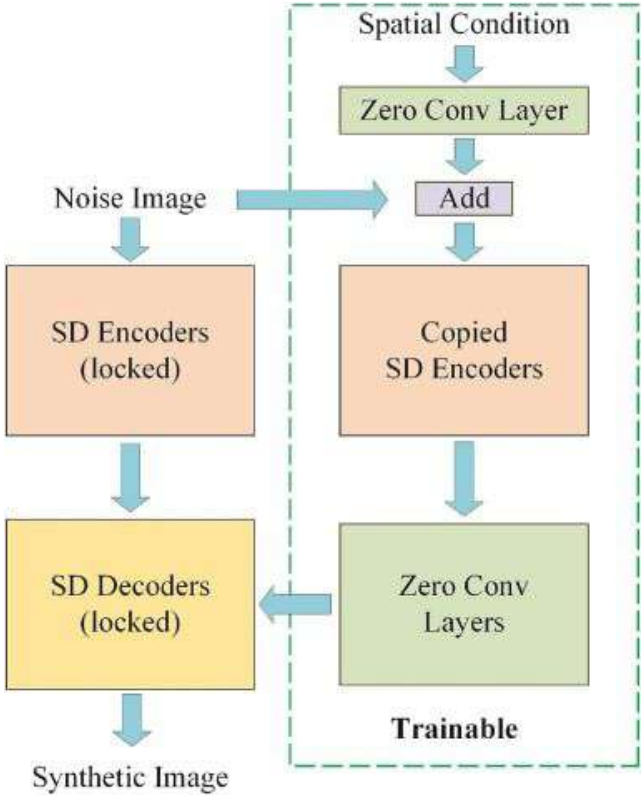
Date: 24-04-2025

Stable Diffusion XL and ControlNet



Landscape to Portrait

Landscape to Portrait

Landscape to Portrait

Landscape to Portrait

Landscape to Portrait

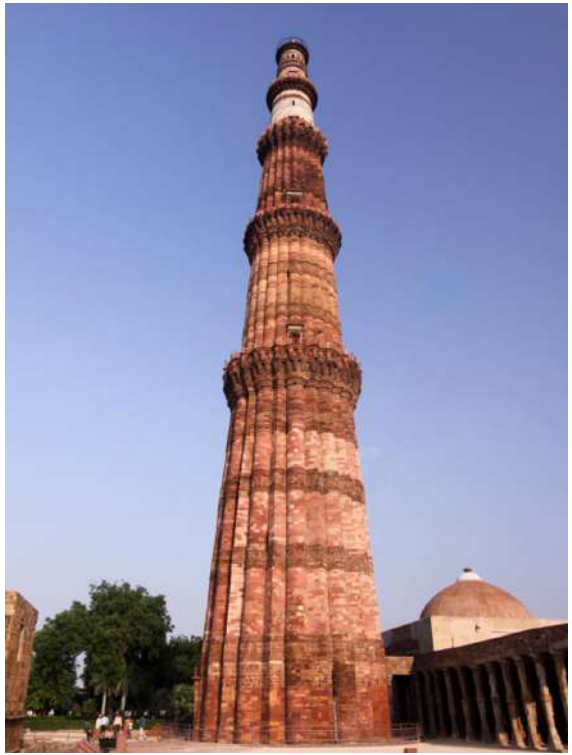
Landscape to Portrait

Landscape to Portrait

Portrait to Landscape

Portrait to Landscape

Portrait to Landscape



Portrait to Landscape

Portrait to Landscape