



# TEXT TO IMAGE SYNTHESIS

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## ABSTRACT

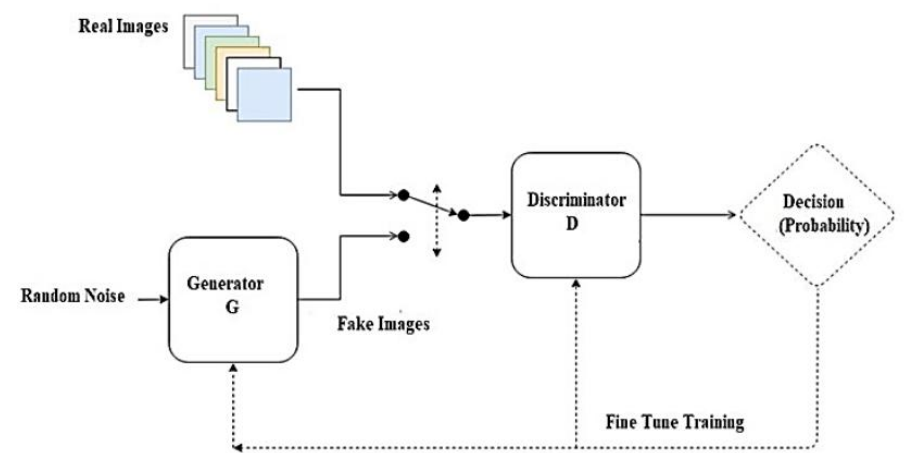
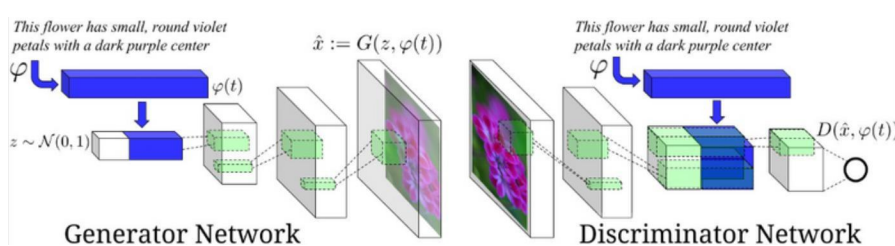
In the fields of computer vision and natural language processing, text-to-image creation creates an image from a textual description. Text-to-image generation has a wide range of applications, including advertising, e-commerce, gaming, concept visualization, automated image generation, generative art, AI-powered design, human-computer interaction, and image dataset augmentation. A Text to Image Synthesis system that can generate excellent images from textual descriptions is the end product.

## OBJECTIVE

The goals or learning path for creating a TTI (Text to Image Synthesis) model using the GAN architecture can be the following actions: -

- **Generative Adversarial Networks (GANs):** An Overview To lay the groundwork for the text to image synthesis model, learn about the design and operation of GANs.
- **Data Gathering:** To train the model, gather a sizable and varied collection of photographs and the textual descriptions that go with them.
- **Designing** the generator and discriminator networks with the text to image synthesis task's unique requirements in mind is known as "model design."
- **Evaluation:** Evaluate the performance of the model using metrics such as image quality, visual similarity, and diversity of generated images.
- **Optimization:** Improve the model performance through optimization techniques such as hyperparameter tuning and fine-tuning.

## METHODOLOGY



## PROPOSED SYSTEM

Using a text encoder, we encrypt the text query. The description embedding is concatenated to the noise vector after being initially compressed using a fully-connected layer to a minimal dimension.

The deconvolutional layer, where up sampling occurs, receives it next. The discriminator takes into account both the generated image and the written description. It then evaluates how well the created image matches the real image, computes the loss function, and modifies the weights as necessary.

Various word embedding methods, including GloVe (Global Vectors for Word Representation), a trained word embedding methodology, and BERT, will be used to compare the results (Bidirectional Encoder Representations from Transformers)

## RESULTS



Fig - 20 This flower is purple in color with oval shaped petals



Fig - 21 The flower is yellow in color with oval shaped petals

## CONCLUSION

In conclusion, Text-to-Image Generation using GANs is a rapidly growing field that holds promise for a wide range of applications. The use of GANs has shown to be effective in synthesizing images from textual descriptions, and ongoing research is likely to lead to further improvements in the quality and consistency of the generated images.