**Text-To-Image Generation**

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**Project Proposal**

In the world of computer vision, natural language descriptions can be tricky in automatically generating images. It is still a fundamental problem to generate fine-grained high-quality images just based on text descriptions. With the help of Generative Adversarial Networks (GANs), this project reviews and represents various methodologies that have been implemented to generate realistic images based on text descriptions.

A close up of text on a white background

Description automatically generated

In this project, we will train our model on various GAN implementations, such as GAN-CLS algorithm built on DCGAN, Stacked GANs and Attentional GANs. We then use this model on text captions, to generate images that correspond to the captions. The input data will be of a text format while the output dataset may contain images of birds, flowers, natural scenes or human faces. Next, we will analyze the experimental results and provide an exhaustive comparison table of the models in terms of their efficiency in generating images. Lastly, we will discuss the drawbacks and limitations of various approaches taken and offer future recommendations for research using other deep learning models. The project will conclude by suggesting which technique would be a best-fit for text-to-image synthesis.