

Graduate Certificate in Artificial Intelligence with Machine Learning
AIGC 5504 – Emerging Technologies in Artificial Intelligence

Lab 6: Image and Video Generation Using Pre-trained Models

Submission guidelines:

- For this lab, you will need to submit 1 PDF file.
 - Convert your codes to PDF.
 - Name the PDF as follows: `firstname_lastname_LAB 6.pdf`
 - Go to the course Blackboard → Labs folder → Lab Exercises 6 and submit the pdf.
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Lab goals:

- Learn how to use Pre-Trained Models for image generation.
- Explore the different image generation models for varying Generative AI applications.

Part 1: Create Text-Guided Image Generation Model (Text-To-Image) for an application to help generate scenery images for a movie.

1. **Setup Pre-trained model to generate a scenery image for a futuristic movie:**
 - Follow the tutorial code on running text-to-image with stable diffusion.
 - Adjust the code use `torch.Generator()` to produce a reproducible pipeline.
2. **Customize the scenery:**
 - Experiment with different prompts to include specific details to the image.
 - Review and experiment with parameters like height, width, guidance scale, and negative prompt.
3. **Compare different Pre-trained Models**
 - Review the available pre-trained models on hugging face.
 - Identify any models that can be used for application of text-guided image generation.
 - Adjust the code to use the pre-trained models and compare the generated images.

Deliverables:

- Implementation code.
- Generated Images

Enjoy!
