

Internship Title: Text-to-Image Generation
Intern Name: Suhana Pathan
Internship Duration: 05-04-2025 to 05-05-2025
Organisation: NullClass

Introduction

This report outlines my work during a 1-month internship with NullClass, where I was tasked with implementing a real-world text-to-image generation pipeline using deep learning and NLP tools.

Background

Before starting, I had foundational knowledge in Python, basic machine learning, and deep learning frameworks. This project pushed me to integrate image processing with NLP and GANs.

Learning Objectives

- Learn to process and visualize image data
 - Understand text tokenization using Hugging Face Transformers
 - Build a GAN-based text-to-image generator
 - Evaluate model performance using precision, recall, and accuracy
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Activities and Tasks

- **Task 1:** Loaded and displayed images using OpenCV and Matplotlib
 - **Task 2:** Tokenized and encoded text inputs using BERT
 - **Task 3:** Built a GAN-based text-to-image generator pipeline
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Skills and Competencies Gained

- Python scripting and Jupyter Notebook
 - Image processing with OpenCV and Matplotlib
 - Tokenization with Transformers
 - GAN-based image generation
 - Evaluation using accuracy, precision, recall
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Feedback and Evidence

- GitHub repository with all source code and notebooks
 - Google Drive for large model files
 - Daily updates through NullClass daily tracker
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Challenges and Solutions

- Faced model convergence issues; resolved with hyperparameter tuning
 - Large model files managed via Google Drive
 - Library version conflicts fixed by using a consistent environment
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Outcomes and Impact

- Successfully completed all tasks with over 70% accuracy
 - Gained hands-on experience with real-world AI systems
 - Improved confidence in integrating NLP and CV techniques
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Conclusion

This internship has been a valuable learning journey. I applied theoretical concepts to practical scenarios, enhanced my problem-solving skills, and developed a complete machine learning pipeline from scratch.