



STARRY AI NIGHT

A Deep Dive into Van Gogh's Palette

Problem Statement

Vincent van Gogh's paintings are renowned for their distinctive style, characterized by bold brushstrokes, vibrant colors, and emotive expression. However, creating new artwork in the style of Van Gogh presents a unique challenge, requiring a deep understanding of his artistic techniques and aesthetic sensibilities.

In this project, we aim to leverage the power of artificial intelligence (AI) to generate paintings inspired by Vincent van Gogh's iconic works. Specifically, we will explore the use of a diffusion model in conjunction with a cycle generative adversarial network (CycleGAN) to generate new artworks that capture the essence of Van Gogh's style.

Objectives

- **Training the Models:** We will train a diffusion model and a CycleGAN on a dataset of Vincent van Gogh's paintings. The diffusion model will learn to generate high-quality images with Van Gogh's characteristic brushwork and color palette, while the CycleGAN will facilitate style transfer between different artistic domains.
- **Generating Van Gogh Paintings:** Using the trained models, we will generate a series of new paintings in the style of Vincent van Gogh. These generated artworks will aim to emulate the visual aesthetics and emotional impact of Van Gogh's original masterpieces.

Objectives (contd)

- *Comparative Analysis:* We will conduct a comparative analysis between the generated paintings and authentic Van Gogh artworks. This analysis will involve qualitative assessments of artistic fidelity, visual coherence, and stylistic consistency to evaluate the effectiveness of our AI-generated paintings in capturing the essence of Van Gogh's style.
- *User Interaction and Feedback:* We will develop a user interface that allows users to explore the generated paintings and provide feedback on their authenticity and artistic appeal. User feedback will be incorporated into the iterative refinement of our AI models to improve their performance and fidelity to Van Gogh's style.

Technical Dependencies

- Dataset Availability : Kaggle
- Computational Resources : Rented Cloud GPU
- Deep Learning Frameworks : Tensorflow
- Model Optimization and Hyperparameter Tuning : Gradient Clipping , Regularization ...
- Integration of Models : Diffusion Models and CycleGAN

Show Stoppers

- Overfitting and Generalization Issues
- Training Time and Convergence
- Artistic Fidelity and Visual Quality
- Ethical and Legal Considerations
- User Engagement and Feedback



Team name : OUTOFBOUND

College Name: Coimbatore
Institute of Technology

Team Leader : [Aravind.M.S](#)

Team Members:

[Sri Bhavan Prakath.B](#)

[Sunitha.S](#)