# AI-Assisted Creative Expression: a Case for Automatic Lineart Colorization

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# Contents

# Abstract

# Introduction

## Motivations

- Machine Creativity
- Deep Learning Breakthroughs
- Rise of Generative Neural Networks

## Problem Statement

- Black & White Lineart VS Gray Scale
- Incomplete Information Challenge fo Computer Vision
- Natural Artisitic Control Back to the User

## Contributions

- Reciepe for curating datasets for the task of automatic colorization
- 3 Models exploring different aspect of the topic:
  - PaintsTorch: High Quality, User-Guided, Fast Realtime Feedback
  - StencilTorch: Human-Machine Collaboration, Human-in-the-Loop
  - StableTorch: Variance and Iterative Exploration
- A reflexion on Current Generative AI Ethical and Societal Impact in our Society

## Concerns

- Raise awareness about
  - Deepfakes
  - Model Fabulations
  - Ownership & Copyright Ambiguities
  - Biases & Discrimination
- About this work
  - Images used only for Educational and Research Purposes
  - Only describe receipes for repoducibility
  - Dataset and Weights are not Distributed (Only Code)

## Structure

- Plain Language Expanded TOC

# Background

### History of Artiifical Intelligence

### Neural Networks

### Autoencoders

### Variational Autoencoders

### Generative Adversarial Networks

### Denoising Diffusion Models

## Contrib I (Find Catchy Explicit Name)

### State of the Art

### Method

### Setup

### Results

### Summary

# Contrib II (Find Catchy Explicit Name)

**State of the Art**

**Method**

**Setup**

**Results**

**Summary**

## Contrib III (Find Catchy Explicit Name)

### State of the Art

### Method

### Setup

### Results

### Summary

# Contrib IV (Find Catchy Explicit Name)

**State of the Art**

**Method**

**Setup**

**Results**

**Summary**

## Ethical and Societal Impact

# Conclusion

## References