Machine Learning - Research Report

Applications of Generative Adversarial Networks in images style transfer: A survey
Presentation outline

Author: Liviu-Ștefan Neacșu-Miclea
Specialization: Applied Computational Intelligence
Group: 246/2

1 Introduction

- Talk about real world problems the usage of GANs in style transfer may solve.
- Enhance the superiority of generative models to traditional image editors.
- Hint to the possibility of breakthrough in representation learning while working in the style transfer field.
- Explain the advantages of unpaired image-to-image translation approach

2 Related work

Briefly introduce theoretical concepts and models found in literature to the audience
- Explain the original idea behind GANs.
- Define Neural Style Transfer.
- Gently introduce CycleGAN and StyleGAN. Explain the main features of each architecture (cycle consistency, style injection, stochastic variation)
- Talk about CartoonGAN and GANILLA as SOTA models in cartoonizations and illustration style transfer
- Briefly present AniGAN and highlight its achievements in geometry transfer along with the style
- Showcase the main GAN evaluation metrics

3 Comparison

- Show the tables summarizing experimental design differences (focus on epochs, parameters, train time)
- Present the metrics usage summary across experiments and talk about qualitative evaluation (subjectivity of user study, visual assessment) and quantitative metrics charts.

4 Conclusion

Highlight the main findings of the study, and talk about ways to improve it.