



ML and Fashion

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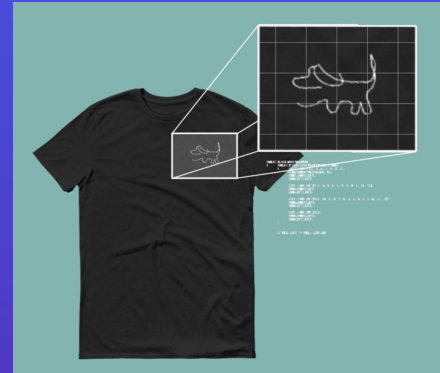
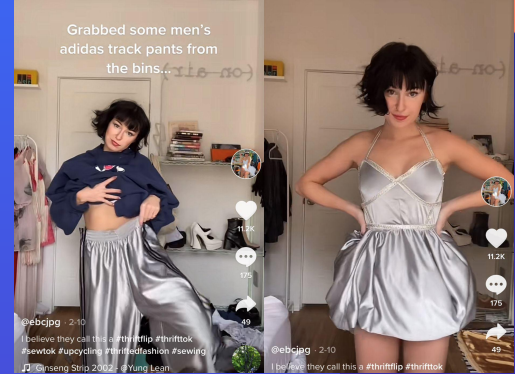
Malavika Krishnamurthy is a fourth year student in the IMB program for ECE in CIT.





Concept: Generating Fashion

Motivation

- Microtrends
- Repurpose existing clothes and patterns to be more modern
- Fast Fashion and sustainability
 - Reduce textile waste
- Cross & Freckle
 - NYC-based fashion start up
 - Selling shirts designed by Neural Nets



Process and Struggles

- Variational AutoEncoders (VAE) 
 - Compress inputs into lower latent space, minimize reconstruction error
- GANs 
 - StyleGAN2 combines elements of GANs and Style-transfer literature
 - Allows more control over which elements to interpolate bw for output
 - Adaptive instance normalization to better align content and style features
 - ClothingGAN/StyleGAN/TextureGAN
 - Experiment with different number of epochs/episodes
 - Train on dataset acquired from [DeepFashion](#)

Results

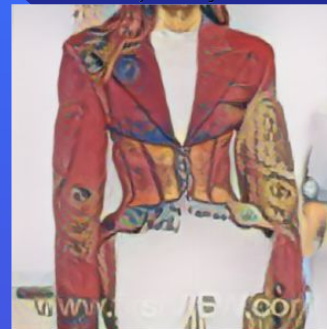
Original content image



Style image



Stylized image



Original content image



Style image



Stylized image



Results (contd)

TextureGAN

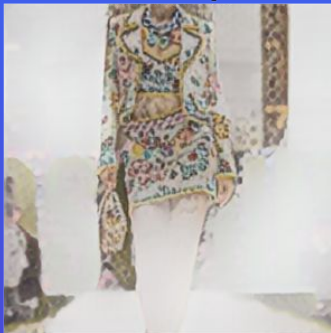
Content image



Texture image



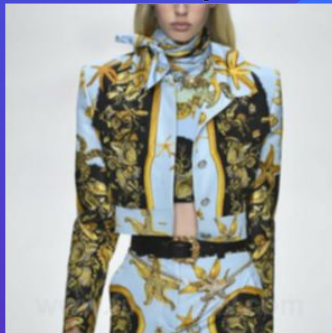
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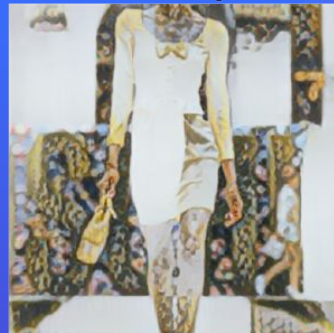
Content image



Texture image



Texturized image



Reflections and Future Work

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AI models with millions in social media followings

- Classify/generate Met Gala themes (2018)

- Predict fashion trends of the next seasons

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Prada Fall 2022 collection



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@miquela debut Prada at Milan Fashion week using 3D gifs