ML and Fashion

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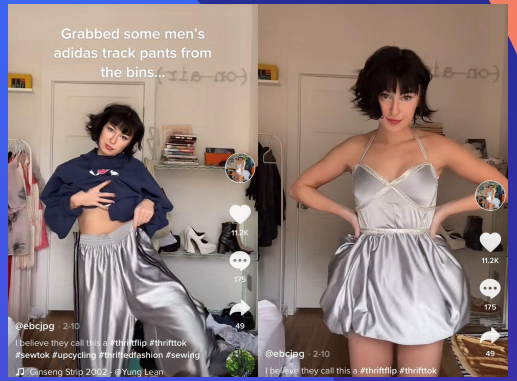
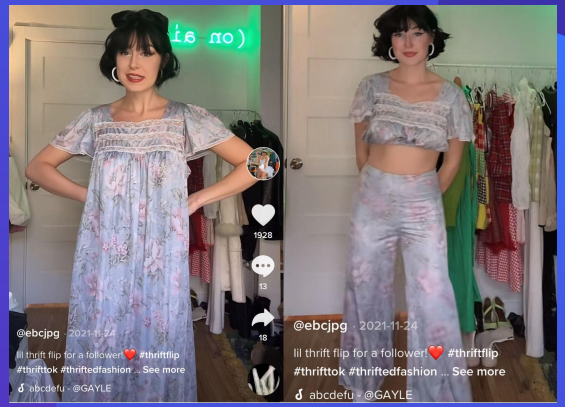
Concept: Generating Fashion

Motivation

- Repurpose existing textiles and patterns to be more modern
- Update fashion sustainably
  - Reduce textile waste
- Thrift Flips
  - Vintage items as jumping-off points to create interesting silhouettes





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: Failures

TextureGAN

Content image

Texture image

Texturized image

Content image

Texture image

Texturized image

Results

ClothingGAN

Original content image

Style image

Stylized image

Original content image

Style image

Stylized image

Results

Content image

Texture image

Texturized image

Original content image

Style image

Stylized image

Reflections and Future Work

- Classify/generate designer trends

Met Gala (2018)

- Couture, Experimental Designs