

Dress Code

A computer vision approach harnessing pre-trained neural networks to **classify vintage dresses by decade**

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`https://github.com/mattybohan/vintage-classifier`

You classify: 50s, 60s, 70s, 80s, or 90s



19(??)s

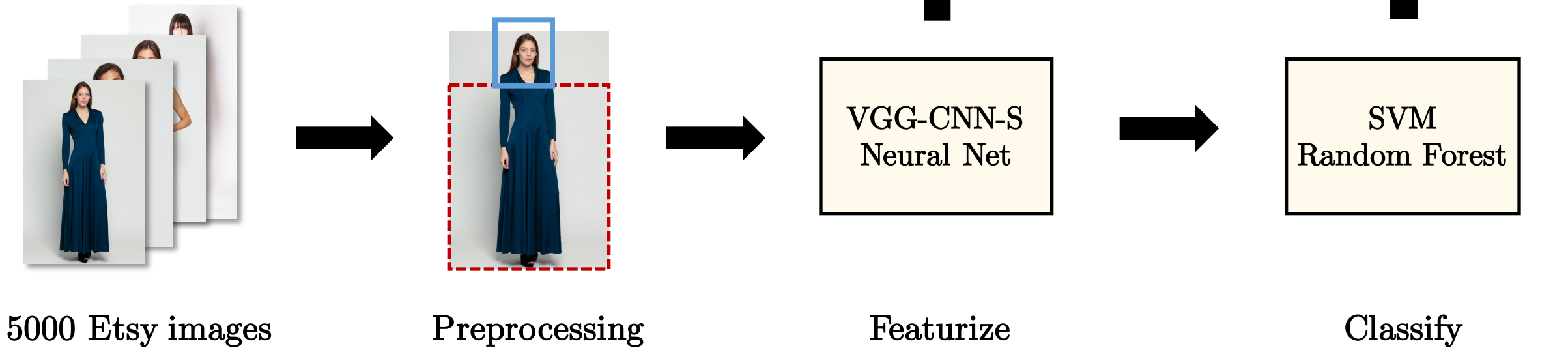


19(??)s

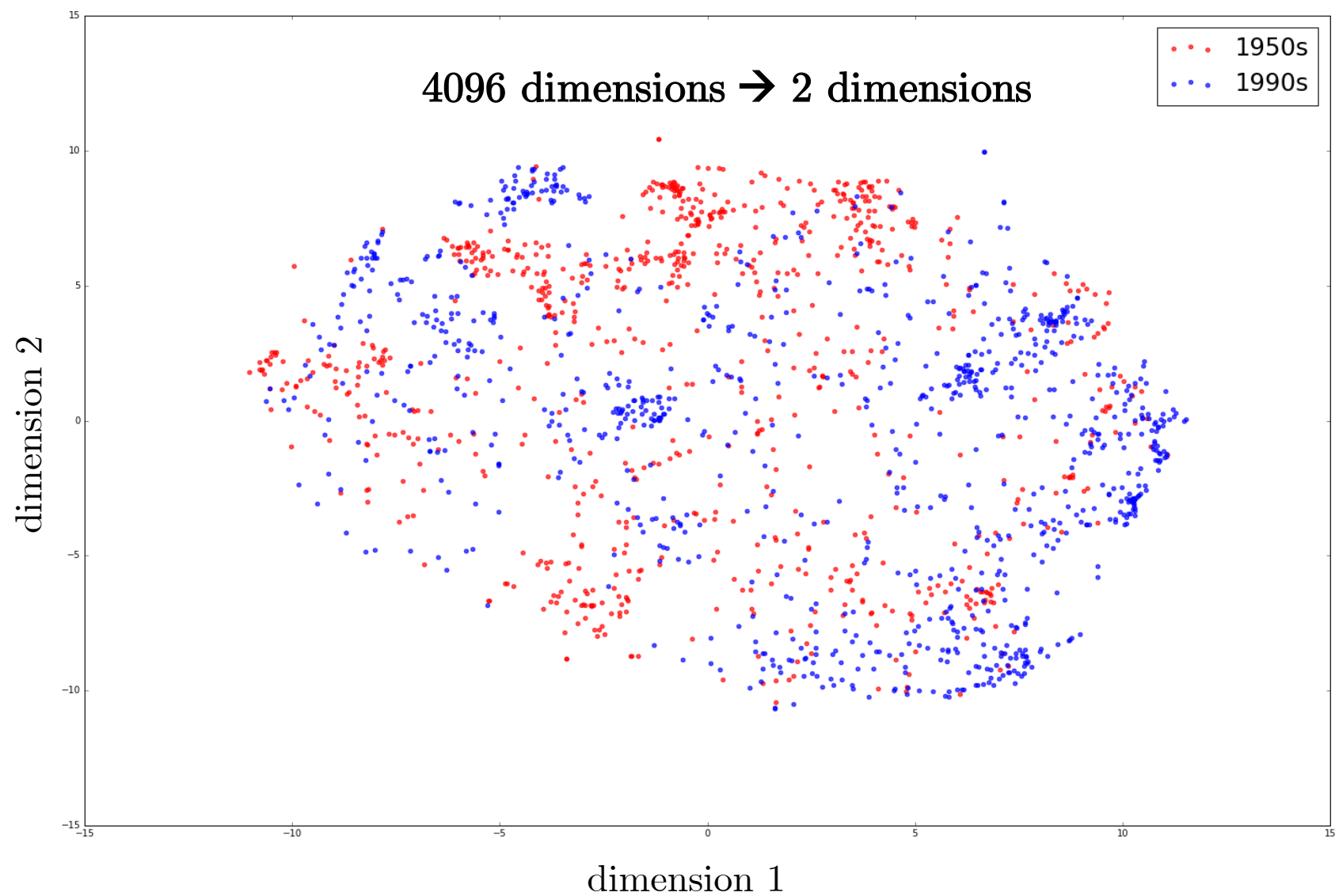


19(??)s

Pipeline



Visualizing feature vectors: t-distributed stochastic neighbor embedding



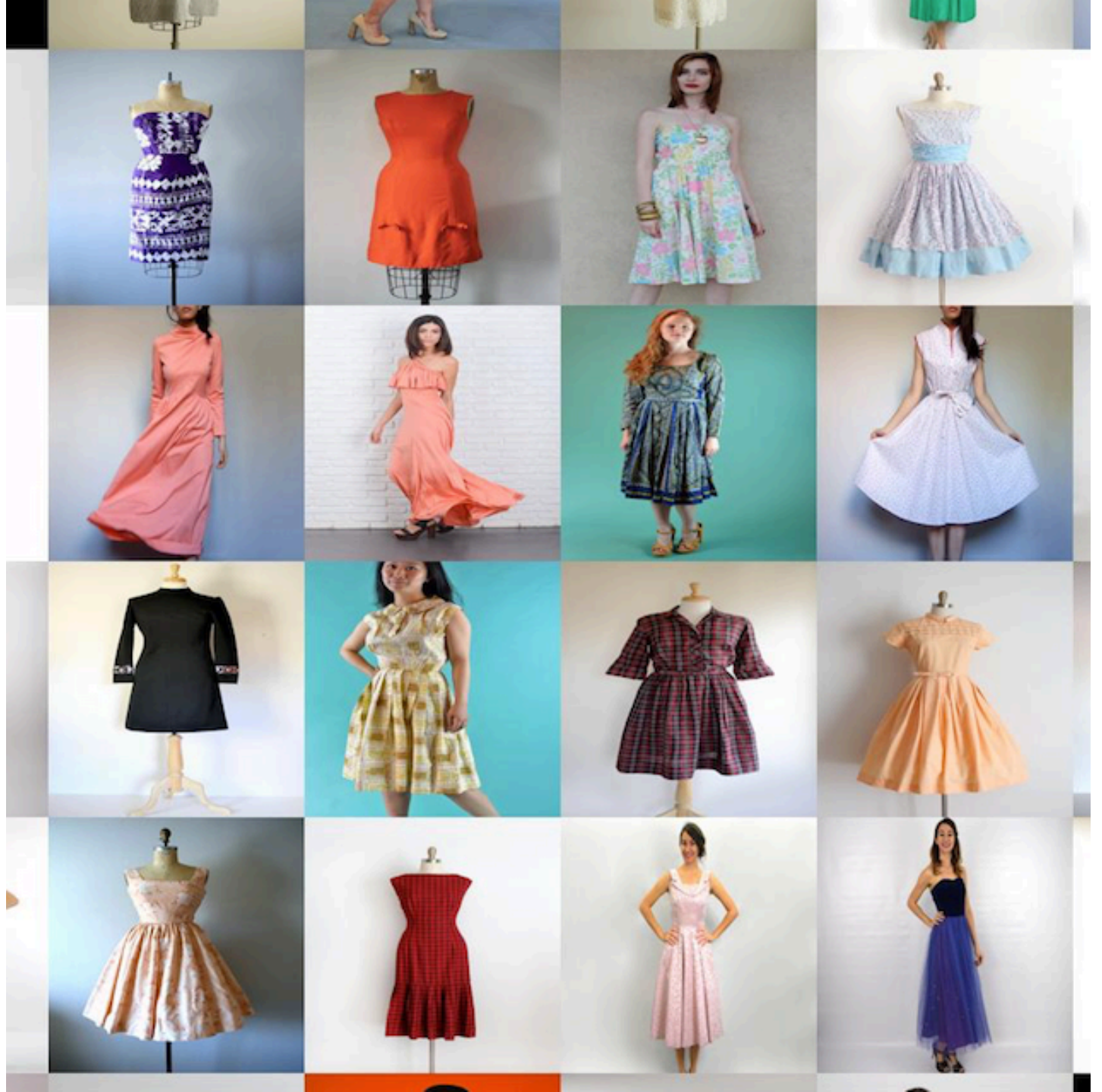
t-SNE: 5 classes



t-SNE: 5 classes



- Soft pastel colors
- A-line dress shape
- Gathered waist

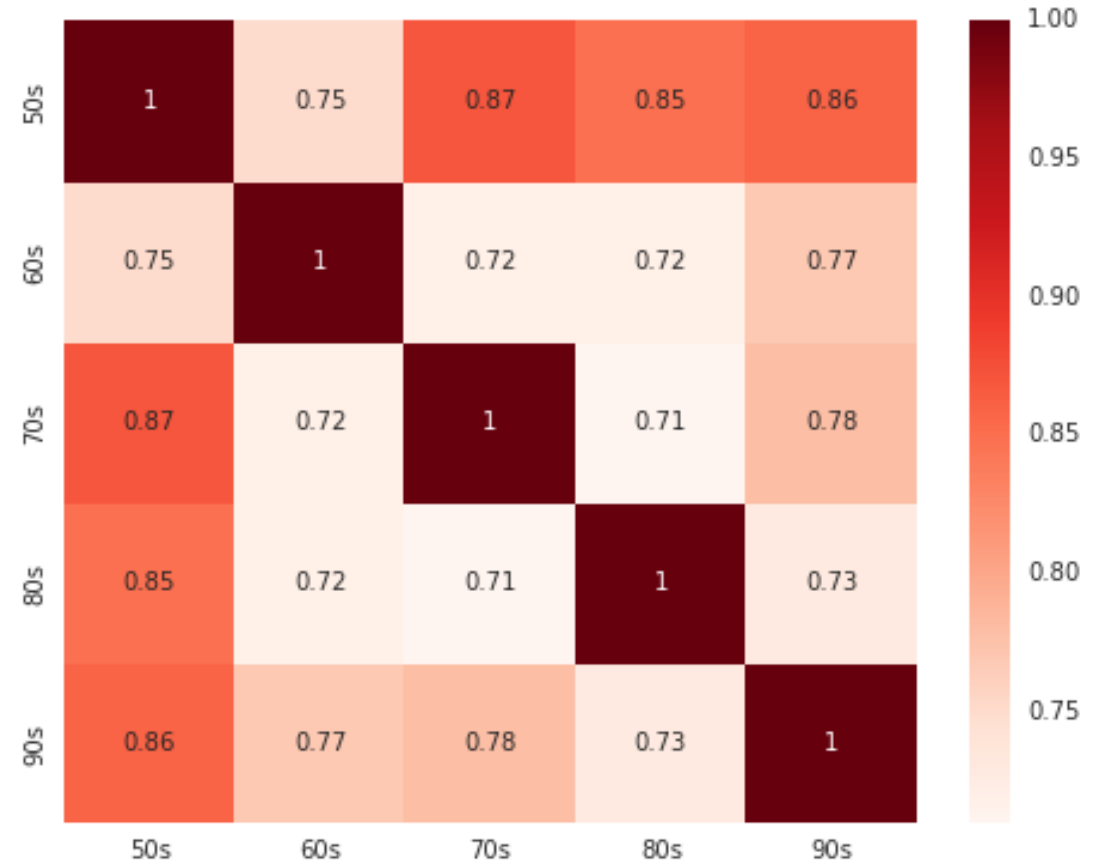


Classification model performance

Accuracy:

- 2 class: max = 0.87
min = 0.71

- 5 class: 0.53 (CV=3)



You classify: 50s, 60s, 70s, 80s, or 90s



1990s



1970s



1980s

Web Application



Model:

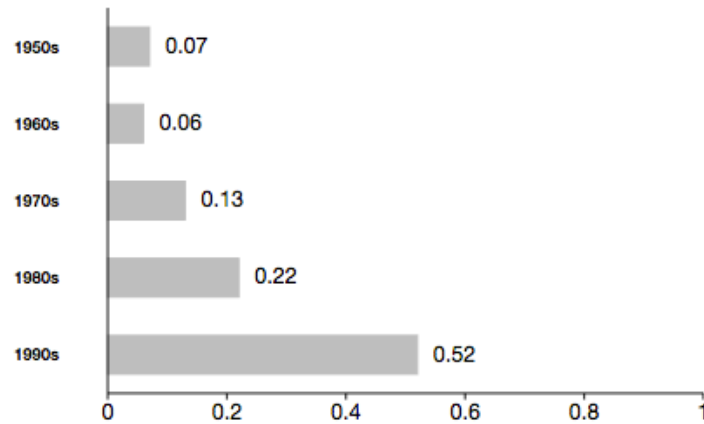
This dress is from the '90s.



This dress is from the '70s.

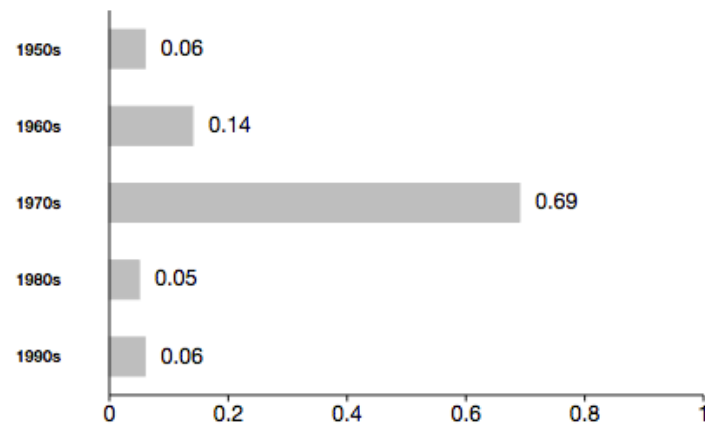


This dress is from the '60s.

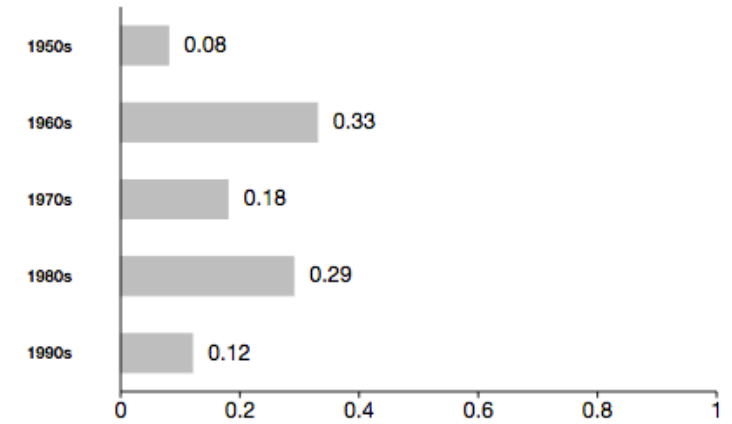


Actual:

1990s



1970s



1980s

Thank you

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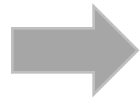
<https://github.com/mattybohan/vintage-classifier>

Appendix

Pipeline

1. Scrape Etsy with BeautifulSoup
 - 5000 images (1000 each class)
2. Preprocess Images
 - Face removal (OpenCV)
 - Cropping 224x224 (Sckit-Image)
3. Pre-trained Convolutionary Neural Network
 - VGG-CNN-S trained on ImageNet
 - Lasagne, AWS EC2 with GPU, Nvidia CUDA
4. Support Vector Machine / Random Forest classification
5. Cosine Similarity to for item comparison
6. Flask web app with D3 graphics

Web Application: Etsy Recommender



1. 80s Polka Dot Dress - \$48

DuncanLovesTess

[Link](#)



2. Beautiful Polka Dot 80s Dress - \$45

TheDowryOfVenice

[Link](#)



3. 80s Dress / Laura Ashley Dress - \$88

DuncanLovesTess

[Link](#)



Web Application

Classify images of vintage dresses by decade



This dress is from the '90s.

Possible interpretation of probabilities:

1. Argmax is decade of origin
2. Contributions (influence) of each decade to overall style

