Found in Time

A tool for discovering the perfect wristwatch

By: Mitchell Lee

Motivation

- Complicated product taxonomy
- Recommendation systems are based on product attributes
- Customers are often concerned with aesthetics

Solution

- Visual recommendation system
- Learn about user (via watch type)
- Personalize online shopping experience

Solution

- Visual recommendation system
- Learn about user (via watch type)
- Personalize online shopping experience

Solution

- Visual recommendation system
- Learn about user (via watch type)
- Personalize online shopping experience

Methodology

Data Acquisition

- BeautifulSoup
- 13,000+ listings and images from luxury retailer

Methodology: Image Representation

Recommender

Inception V3 Neural Network

Methodology: Image Representation

Recommender

Inception V3 Neural Network

- Run prediction for all images

Methodology: Image Representation

Recommender

Inception V3 Neural Network

- Run prediction for all images
- Find most similar images (cosine similarity)

Methodology: Classification

Page Customization

Xception: Deep Neural Network

- Image Augmentation
  - White pixel substitution
  - Keras ImageDataGenerator

Methodology: Classification

Page Customization

Xception: Deep Neural Network

- Image Augmentation
  - White pixel substitution
  - Keras ImageDataGenerator



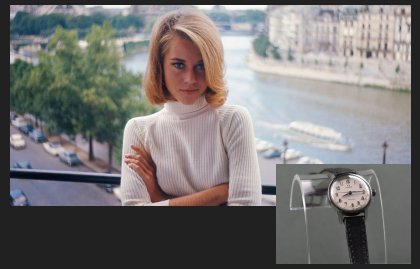



Methodology: Classification

Page Customization

Xception: Deep Neural Network

- Transfer Learning
  - Mens / Womens
  - Gold / Not Gold
- Adjust banner based on watch



Thank You

Mitchell Lee

M.S. Mech Eng Columbia University

Email: mitchell.lee99@gmail.com

Git: https://github.com/leem99

LinkedIn: https://www.linkedin.com/in/mitchellvanlee/