DeepFashion: Powering Robust Clothes Recognition and Retrieval with Rich Annotations

1. Motivation
Task: clothes recognition and retrieval
- Landmarks improve fine-grained recognition
- Massive attributes better partition feature space
- Photo pairs bridge the cross-domain gap

2. DeepFashion Dataset
Data Source
- Search engines, online stores, user posts.

Quality Control
- Duplicate removal, fast screening, double checking

Annotation Assessment:
- attribute positive negative
- Label accuracies (%) 97.9 99.4

Sample Images

Attributes Statistics

Landmarks and Pairs

3. FashionNet
Network Architecture
- FashionNet jointly predicts landmarks and attributes to unify global and local feature learning.

Landmark Pooling Layer
- Landmark pooling layer pools and gates features from estimated landmark locations.

Multi-task Learning
- Cross-entropy loss for attributes, Euclidean loss for landmarks, triplet loss for pairs.

4. Benchmarks
Category & Attribute Prediction
- Metric: top-3 recall rate

References

Download Dataset:

In-shop Clothes Retrieval
Metric: top-k retrieval accuracy

Consumer-to-shop Clothes Retrieval
Metric: top-k retrieval accuracy

Further Analysis
How different variations affect performance?

WTBI
DARN
DeepFashion

Category (%)

Attributes (%)

43.73 27.46
59.48 42.35
82.58 45.52

Metric: top-3 recall rate

Figures and Tables