Ten-million-order Human Database
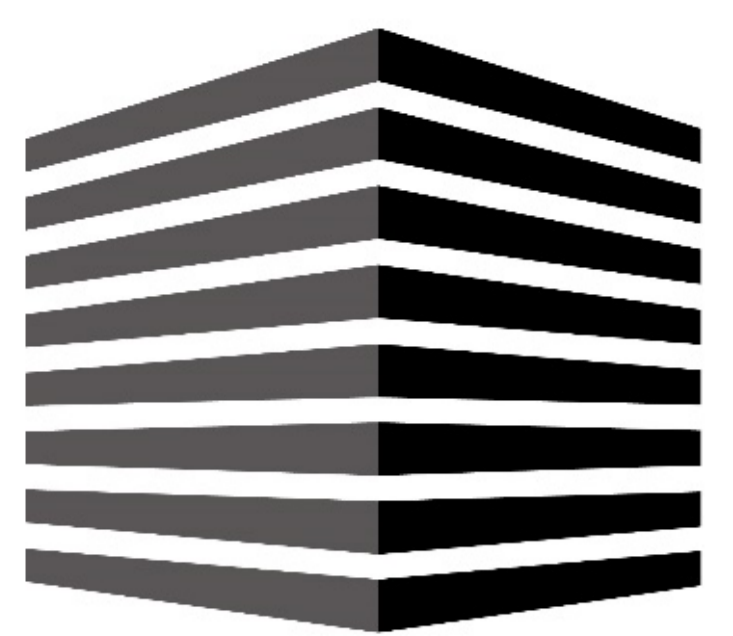## for World-wide Fashion Culture Analysis

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cvpaper.challenge

Proposal
Discovering world-wide fashion trends w/ 25M fashion DB!
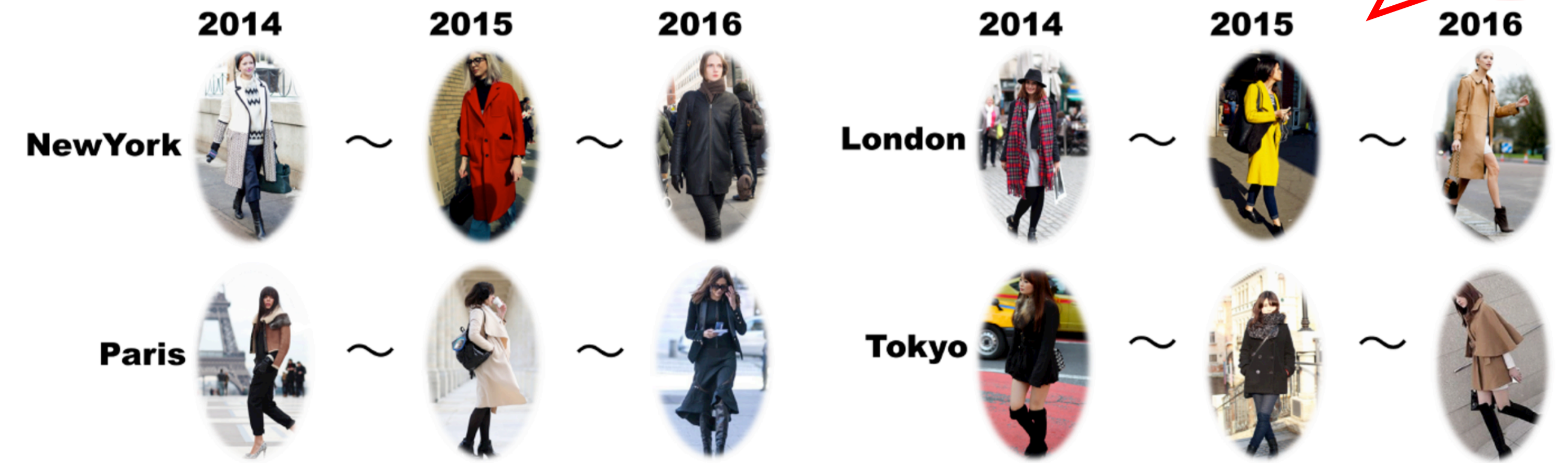
Contributions
1. Fashion Culture DataBase (FCDB), which contains and is refined 25M images on Flickr
2. As the perspective of huge DB, we conduct inter-city similarity and temporal fashion trends in a simple way

Dynamic Fashion Cultures (see right fig.) in a city??
➢ World-wide fashion trends from SNS images
➢ What kind of FashionDB do we need?

➡ **We have constructed a FashionDB for the emerging task**

【Dynamic Fashion Cultures】

Dynamic!

(1) Collection of 10-million-order fashion snaps from Flickr
(2) GPS/time stamp are corresponded in a fashion snap
(3) Less noise with data refinement

Approach
Fashion Culture DataBase (FCDB)

Fashion Culture Database

1,980,000⁺ geo-tag imgs
25,707,690 person bboxes
16 cosmopolitan cities

【Database Collection】

original image w/ GPS&Time

Faster R-CNN

latitude: 35.613116
longitude: 139.783687
city: Tokyo
year: 2006, month: July

StyleNet+L*a*b*

Person image & feature

Tokyo
per original image

【Related Fashion-oriented DB】

Database	#images	#cate.	GPS?	Box?	Time Stamp?
HipsterWars	1,893	5			
Fashionista	158,235	53		✓	
Fashion144k	144,169	N/A	✓		
Fashion14	13,126	14			
DeepFashoin	800,000	1,050		✓	
FCDB (ours)	25,707,690	16	✓	✓	✓

【Data Refinement w/ SVM】

Fashion snap   Non Fashion Snap

Larger, more diverse and less noise w/ data collection and refinement
➢ FCDB contains 25M images, geo-tag and time stamps
➢ Furthermore, **FCDB** improves reliability by **removing noise**
➢ In the refinement, we prepare **2,886** pieces (totally **5,772** pieces) of clothes, noise images for SVM

Experiment
City Similarity (left) & Dynamic Fashion Cultures (right)

➢ w/ Fashion Style Distribution (FSD) based on codeword vector (StyleNet + k-means cluster)
➢ 16 cosmopolitan cities are calculated with each other

➢ w/ **Fashion Trend Descriptor (FTD)** which is subtraction temporally consecutive FSDs
➢ Yearly fashion trends (16 years)
➢ Characteristics cities (ex. Tokyo, Boston)

Summary

1. **Fashion Culture Database**
   ➢ Ten-million-order fashion database
   ➢ More reliable DB by removing the noise of FCDB

2. **Fashion style analysis w/ FCDB**

3. **Regionality / Temporal change**
   ➢ Suggests economic and cultural formation
   ➢ Suggests the possibility of contributing to event detection on user interest / SNS

Boston (2010)   Tokyo (2011)
Boston (2011)   Tokyo (2012)
Boston (2012)   Tokyo (2013)

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