

# Image and Video Retrieval and Classification

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Note:

- Any papers related to image retrieval and classification are relevant to them theme of our course.
- Well-known conf. include CVPR/ICCV/ECCV, ACM MM (Multimedia), ACM ICMR (ACM Int. Conf. on Multimedia Retrieval), and SIGGRAPH.
- Well-known journals include IJCV and TPAMI.

ICMR 2012:

Its program is at:

<http://www.icmr2012.org/program.html>

Many computer vision conf. papers are at Computer Vision Resource

<http://www.cvpapers.com/>

ACM MM 2012:

Its accepted paper list is at:

<http://www.acmmm12.org/accepted-papers/>

Talks of some of these papers are available at videos:

<http://techtalks.tv/events/93/> (Techtalks)

## Object recognition

1. Beyond Spatial Pyramids: Receptive Field Learning for Pooled Image Features  
Yangqing Jia, Chang Huang, Trevor Darrell  
CVPR 12 (Oral)
2. Large-scale Image Classification with Trace-norm Regularization  
Zaid Harchaoui, Matthijs Douze, Mattis Paulin, Miroslav Dudik, Jérôme Malick  
CVPR 12 (Oral)
3. Towards Good Practice in Large-scale Learning for Image Classification

Florent Perronnin, Zeynep Akata, Zaid Harchaoui, Cordelia Schmid  
CVPR 12

## kNN based classification

4. Local Naive Bayes Nearest Neighbor for Image Classification  
Sancho McCann, David G. Lowe  
CVPR 12

## Graph Matching and Construction

5. Progressive Graph Matching: Making a Move of Graphs via Probabilistic Voting  
Minsu Cho, Kyoung Mu  
CVPR 12 (Oral)
6. Scalable k-NN Graph Construction for Visual Descriptors  
Jing Wang, Jingdong Wang, Gang Zeng, Zhuowen Tu, Rui Gan, Shipeng Li  
CVPR 12

## Considering geometric information

7. Object retrieval and localization with spatially-constrained similarity measure and k-NN re-ranking,  
CVPR12
8. Image Retrieval with Geometry-Preserving Visual Phrases  
Yimeng Zhang (Cornell University); Zhaoyin Jia (Cornell University); Tsuhan Chen;  
CVPR 11
9. Spatial-Bag-of-Features  
Yang Cao, Changhu Wang, Zhiwei Li, Liqing Zhang, Lei Zhang  
CVPR 10

## Query expansions

10. Total Recall II: Query Expansion Revisited  
Ondrej Chum; Andrej Mikulik (CMP, CTU Prague); Michal Perdoch (CMP, CTU Prague); Jiri

Matas;  
CVPR 11

## Multi-attribute queries

11. Image Ranking and Retrieval Based on Multi-Attribute Queries  
Behjat Siddiquie (University of Maryland); Rogerio Feris; Larry Davis;  
CVPR 11
12. Combining attributes and Fisher vectors for efficient image retrieval  
Matthijs Douze; Arnau Ramisa (INRIA); Cordelia Schmid;  
CVPR 11

## Face retrieval

13. Face Image Retrieval by Shape Manipulation  
Brandon Smith (University of Wisconsin-Madison); Shengqi Zhu (University of Wisconsin-Madison); Li Zhang;  
CVPR 11
14. Scalable Face Image Retrieval with Identity-Based Quantization and Multi-Reference Re-ranking  
Zhong Wu, Qifa Ke, Jian Sun, Heung-Yeung Shum  
CVPR 10

## Semantic indexing

15. Hierarchical Semantic Indexing for Large Scale Image Retrieval  
Jia Deng (Princeton University); Alexander Berg (Stony Brook University); Li Fei-Fei;  
CVPR 11
16. Towards Semantic Embedding in Visual Vocabulary  
Rongrong Ji, Hongxun Yao, Xiaoshuai Sun, Bineng Zhong, Wen Gao  
CVPR 11
17. Building and Using a Semantivisual Image Hierarchy  
Li-Jia Li, Chong Wang, Yongwhan Lim, David M. Blei, Li Fei-Fei  
CVPR 10

## Query-specific approaches

18. Query-Specific Visual Semantic Spaces for Web Image Re-ranking  
Ke Liu (CUHK); Xiaogang Wang (The Chinese University of Hong Kong);  
CVPR 11
19. Improving Web Image Search Results using Query-relative Classifiers  
Josip Krapac, Moray Allan, Jakob Verbeek, Frédéric Jurie  
CVPR 10

## Nearest-neighbor queries

20. A Fast Nearest Neighbor Search Algorithm by Nonlinear Embedding  
Yoonho Hwang, Bohyung Han, Hee-Kap Ahn  
CVPR 12
21. Hello neighbor: accurate object retrieval with k-reciprocal nearest neighbors  
Qin Danfeng (ETH Zurich); Stephan Gammeter (ETH Zurich); Lukas Bossard (ETH Zurich); Till Quack; Luc VanGool;  
CVPR 11
22. Compact Projection: Simple and Efficient Near Neighbor Search with Practical Memory Requirements  
Kerui Min, Linjun Yang, John Wright, Lei Wu, Xian-Sheng Hua, Yi Ma  
CVPR 10

## Databases

23. SUN Database: Large Scale Scene Recognition from Abbey to Zoo  
Jianxiong Xiao, James Hays, Krista A. Ehinger, Aude Oliva, Antonio Torralba  
CVPR 10
24. Learning To Detect Unseen Object Classes by Between-Class Attribute Transfer  
C. H. Lampert, H. Nickisch, and S. Harmeling,  
CVPR 2009
25. Imagenet: A large-scale hierarchical image database  
Jia Deng, Wei Dong, Richard Socher, Li-Jia Li, Kai Li and Li Fei-Fei,  
CVPR 2009
26. 80 million tiny images: a large dataset for non-parametric object and scene recognition  
TPAMI08

## Image browsing

27. Image Webs: Computing and Exploiting Connectivity in Image Collections  
Kyle Heath, Natasha Gelfand, Maks Ovsjanikov, Mridul Aanjaneya, Leonidas J. Guibas  
CVPR 10

## Hashing

28. Spherical Hashing  
Jae-Pil Heo, Youngwoon Lee, Junfeng He, Shih-Fu Chang, Sung-Eui Yoon  
CVPR 12
29. Supervised Hashing with Kernels  
Wei Liu, Jun Wang, Rongrong Ji, Yu-Gang Jiang, Shih-Fu Chang  
CVPR 12 (Oral)
30. QsRank: Query-sensitive Hash Code Ranking for Efficient  $\epsilon$ -neighbor Search  
Xiao Zhang, Lei Zhang, Heung-Yeung Shum  
CVPR 12 (Oral)
31. Compact Hashing with Joint Optimization of Search Accuracy and Time  
Junfeng He (Columbia University); Regunathan Radhakrishnan; Shih-Fu Chang; Claus Bauer;  
CVPR11
32. Iterative Quantization: A Procrustean Approach to Learning Binary Codes  
Yunchao Gong; Svetlana Lazebnik (University of North Carolina at Chapel Hill);  
CVPR 11
33. Product quantization for nearest neighbor search  
TPAMI11
34. Semi-Supervised Hashing for Scalable Image Retrieval  
Jun Wang, Sanjiv Kumar, Shih-Fu Chang  
CVPR 10

## Object detection

35. Three Things Everyone Should Know to Improve Object Retrieval  
Relja Arandjelović, Andrew Zisserman  
CVPR 12

36. Unsupervised Auxiliary Visual Words Discovery for Large-Scale Image Object Retrieval  
Yin-Hsi Kuo (National Taiwan University and Academia Sinica); Hsuan-Tien Lin; Wen-Huang Cheng; Yi-Hsuan Yang; Winston Hsu;  
CVPR 11
37. Large-Scale Live Active Learning: Training Object Detectors with Crawled Data and Crowds  
Sudheendra Vijayanarasimhan; Kristen Grauman;  
CVPR 11
38. Unsupervised Detection and Segmentation of Identical Objects  
Minsu Cho, Young Min Shin, Kyoung Mu Lee  
CVPR 10

## Attribute based query

39. Weak Attributes for Large-Scale Image Retrieval  
Felix X. Yu, Rongrong Ji, Ming-Hen Tsai, Guangnan Ye, Shih-Fu Chang  
CVPR 12
40. WhittleSearch: Image Search with Relative Attribute Feedback  
Adriana Kovashka, Devi Parikh, Kristen Grauman  
CVPR 12
41. Relative attributes, Devi Parikh and Kristen Grauman  
ICCV 2011

## Large-scale indexing

42. Aggregating Local Descriptors into a Compact Image Representation  
Hervé Jégou, Matthijs Douze, Cordelia Schmid, Patrick Pérez  
CVPR 10
43. Large-Scale Image Retrieval with Compressed Fisher Vectors  
Florent Perronnin, Yan Liu, Jorge Sánchez, Hervé Poirier  
CVPR 10

## Video

44. Interest Seam Image  
Xiao Zhang, Gang Hua, Lei Zhang, Heung-Yeung Shum  
CVPR 10

## Image annotation

45. Automatic Image Annotation Using Group Sparsity  
Shaoting Zhang, Junzhou Huang, Yuchi Huang, Yang Yu, Hongsheng Li, Dimitris N. Metaxas  
CVPR 10
46. Tag-based Web Photo Retrieval Improved by Batch Mode Re-Tagging  
Lin Chen, Dong Xu, Ivor Wai-Hung Tsang, Jiebo Luo  
CVPR 10

## Self-similarity

47. Global and Efficient Self-Similarity for Object Classification and Detection  
Thomas Deselaers, Vittorio Ferrari  
CVPR 10

## Context-aware

48. Object-Graphs for Context-Aware Category Discovery  
Yong Jae Lee, Kristen Grauman  
CVPR 11
49. Exploiting Hierarchical Context on a Large Database of Object Categories  
Myung Jin Choi, Joseph J. Lim, Antonio Torralba, Alan S. Willsky  
CVPR 11
50. Content-Aware Ranking for Visual Search  
Bo Geng, Linjun Yang, Chao Xu, Xian-Sheng Hua  
CVPR 10

## Metric spaces and similarity function

51. Large scale metric learning from equivalence constraints  
CVPR12
52. Learning Hierarchical Similarity Metrics  
Nakul Verma, Dhruv Mahajan, Sundararajan Sellamanickam, Vinod Nair  
CVPR 12
53. Asymmetric Distances for Binary Embeddings

- Albert Gordo (CVC / XRCE); Florent Perronnin;  
CVPR 11
54. Visual and semantic similarity in ImageNet  
Thomas Deselaers and Vittorio Ferrari  
CVPR 2011
55. Towards Cross-Category Knowledge Propagation for Learning Visual Concepts  
Guo-Jun Qi (ECE, UIUC); Yong Rui (Microsoft Corporation); Qi Tian (University of Texas at San Antonio); Thomas Huang (UIUC);  
CVPR 11
56. Fast Image Search for Learned Metrics  
CVPR08
57. Distance Metric Learning for Large Margin Nearest Neighbor Classification  
NIPS06

## Mobile search

58. Mobile Product Search with Bag of Hash Bits and Boundary Reranking  
Junfeng He, Jinyuan Feng, Xianglong Liu, Tao Cheng, Tai-Hsu Lin, Hyunjin Chung, Shih-Fu Chang  
CVPR 12
59. City-Scale Landmark Identification on Mobile Devices  
David Chen (Stanford University); Georges Baatz (Department of Computer Science, ETH Zurich); Kevin Koeser; Sam Tsai; Ramakrishna Vedantham (Nokia Research Center, Palo Alto); Timo Pylvanainen; kimmo Roimela (Nokia Research Center); Xin Chen (Navteq); Jeff Bach (Navteq); Marc Pollefeys; Bernd Girod; Radek Grzeszczuk;  
CVPR 11

## Knowledge transfer

60. What Helps Where – And Why? Semantic Relatedness for Knowledge Transfer  
Marcus Rohrbach, Michael Stark, György Szarvas, Iryna Gurevych, Bernt Schiele  
CVPR 2010