

Ming Yang

Email: m-yang4@u.northwestern.edu
<http://www.ece.northwestern.edu/~mya671>
Google scholar citation 13,300+, h-index 36

EDUCATION

Ph.D, Aug. 2004 – Jun. 2008
Department of Electrical Engineering and Computer Science
Northwestern University, Evanston, IL, USA
Thesis: Context-aware and attentional visual object tracking
Advisor: Prof. Ying Wu

M.E., Electronic Engineering, Sept. 2001 – Jul. 2004
Tsinghua University, Beijing, P.R.C
Thesis: Research on fast algorithms in H.264 video coding.

B.E., Electronic Engineering, Aug. 1997 – Sept. 2001
Tsinghua University, Beijing, P.R.C
Thesis: PC-based MPEG-II video decoder in DVB-S system.

INTERESTS:

Computer Vision and Machine Learning
Dynamic visual tracking, head and people tracking, face detection, low-level image features, video data mining, mobile vision, and large-scale image retrieval.

Video Coding and Multimedia Communication
Fast motion estimation, error resilient video communication, and optimization of software H.264 codec and MPEG-II decoder.

EXPERIENCES:

Co-founder **Horizon Robotics Inc.**
VP, Software **Beijing, China**
Horizon Robotics Inc. **06/2015–04/2019**

Leading the software engineering force on embedded computer vision products.

Research Scientist **Facebook, Inc.**
AI Research **Menlo Park, CA, USA**
Facebook Inc. **07/2013–06/2015**

Working on photo and video content understanding, especially on large-scale face recognition algorithm and system.

Research Staff Member **NEC Laboratories America, Inc.**
Dept. of Media Analytics **Cupertino, CA, USA**
NEC Laboratories America, Inc. **06/2008–07/2013**

Working on human detection and tracking, video-based event detection and

behavior analysis, mobile vision, and large-scale image retrieval.

Research Assistant
Vision Group in Electrical Engineering
& Computer Science Dept.

Northwestern University
Evanston, IL, USA
08/2004–06/2008

Working with Prof. Ying Wu on non-stationary visual tracking, context-aware and attentional tracking, part-based object detection, and video data mining for tracking. A reliable head tracking system was built for demonstration.

Research Intern
Multimedia Computing Group
Fuji-Xerox Palo Alto Lab, Inc.

Fuji-Xerox Palo Alto Lab, Inc.
Palo Alto, CA, USA
06/2007–09/2007

Working with Dr. Qiong Liu on vital sign estimation, *i.e.* pulse and breath rates, from passive infrared video.

Research Intern
CAD Group
Siemens Medical Solution Inc.

Siemens Medical Solution Inc.
Malvern, PA, USA
06/2006–09/2006

Working with Dr. Senthil Periaswamy on false positive reduction in lung GGO nodule detection in CT images with 3D volume shape descriptors.

Engineering Intern
Embedded Imaging Lab
Motorola Labs

Motorola Labs
Schaumburg, IL, USA
06/2005–09/2005

Working with Dr. James Crenshaw on Adaboost-based face detection for automatic exposure control in handheld cameras.

Research Assistant
Electronic Engineering Dept.

Tsinghua University
Beijing, China
2001–2004

Working on fast algorithms in the video coding standard H.264/AVC and error resilient video communication.

PUBLICATIONS:

Jialian Wu, Chunluan Zhou, Qian Zhang, **Ming Yang**, Junsong Yuan. Self-mimic learning for small-scale pedestrian detection. *ACM International Conference on Multimedia*, Seattle, WA, October 12-16, 2020, full paper, (ACM MM'2020).

Jianzhong He, Shiliang Zhang, **Ming Yang**, Yanhu Shan, Tiejun Huang. BDCN: Bi-directional cascade network for perceptual edge detection. *IEEE Trans. on Pattern Analysis and Machine Intelligence*, accepted, 2020 (T-PAMI).

Guangyi Chen, Jiwen Lu, **Ming Yang**, Jie Zhou. Learning recurrent 3D attention for video-based person re-identification. *IEEE Trans. on Image Processing*, accepted, 2020 (T-IP).

Jialian Wu, Chunluan Zhou, **Ming Yang**, Qian Zhang, Yuan Li, and Junsong Yuan. Temporal-context enhanced detection of heavily occluded pedestrians. *IEEE Conference on Computer Vision and Pattern Recognition*, Seattle, WA, June 14-18, 2020, (CVPR'2020).

Chunluan Zhou, **Ming Yang**, Junsong Yuan. Discriminative feature transformation for occluded pedestrian detection. *IEEE Conference on Computer Vision*, Seoul, Korea, October 27 - November 2, 2019 (ICCV'2019).

Naiyu Gao, Yanhu Shan, Yupei Wang, Xin Zhao, Yinan Yu, **Ming Yang**, Kaiqi Huang. SSAP: Single-shot instance segmentation with affinity pyramid. *IEEE Conference on Computer Vision*, Seoul, Korea, October 27 - November, 2019 (ICCV'2019).

Shunan Mao, Shiliang Zhang, **Ming Yang**. Resolution-invariant person re-identification. *Int'l Joint Conference on Artificial Intelligence*, Macao, China, August 10-16, 2019, (IJCAI'2019).

Jianzhong He, Shiliang Zhang, **Ming Yang**, Yanhu Shan, Tiejun Huang. Bi-directional cascade network for perceptual edge detection. *IEEE Conference on Computer Vision and Pattern Recognition*, Long Beach, CA, June 15-19, 2019, (CVPR'2019).

Xiaobin Liu, Shiliang Zhang, **Ming Yang**. Self-guided hash coding for large-scale person re-identification. *IEEE Conference on Multimedia Image Processing and Retrieval*, San Jose, CA, March 28-30, 2019, (MIPR'2019).

Yansong Tang, Jiwen Lu, Zian Wang, **Ming Yang**, Jie Zhou. Learning semantics-preserving attention and contextual interaction for group activity recognition. *IEEE Trans. on Image Processing*, vol.28, no.10, pp.4997 - 5012, October 2019 (T-IP).

Guangyi Chen, Jiwen Lu, **Ming Yang**, Jie Zhou. Spatial-temporal attention-aware learning for video-based person re-identification. *IEEE Trans. on Image Processing*, vol.28, no.9, pp.4192 - 4205, September 2019 (T-IP).

Shaoyan Sun, Wengang Zhou, Qi Tian, **Ming Yang**, Houqiang Li. Assessing image retrieval quality at the first glance. *IEEE Trans. on Image Processing*, vol.27, no.12, pp.6124-6134, December 2018 (T-IP).

Liangliang Ren, Xin Yuan, Jiwen Lu, **Ming Yang**, Jie Zhou. Deep reinforcement learning with iterative shift for visual tracking. *European Conference on Computer Vision*, Munich, Germany, September 8-14, 2018, (ECCV'2018).

Weixiang Hong, Zhenzhen Wang, **Ming Yang**, Junsong Yuan. Conditional generative adversarial network for structured domain adaptation. *IEEE Conference on Computer Vision and Pattern Recognition*, Salt Lake City, UT, June 19-21, 2018, (CVPR'2018).

Yansong Tang, Zian Wang, Peiyang Li, Jiwen Lu, **Ming Yang**, Jie Zhou. Mining semantics-preserving attention for group activity recognition. *ACM International Conference on Multimedia*, Seoul, Korea, October 22-26, 2018, full paper, (ACM MM'2018).

Gang Hua, Chengjiang Long, **Ming Yang**, Yan Gao. Collaborative active visual recognition from crowds: a distributed ensemble approach. *IEEE Trans. on Pattern Analysis and Machine Intelligence*, vol.40, no.3, pp.582-594, March 2018 (T-PAMI).

Wengang Zhou, **Ming Yang**, Xiaoyu Wang, Hoqiang Li, Yuanqing Lin, Qi Tian. Scalable feature matching by dual cascaded scalar quantization for image retrieval. *IEEE Trans. on Pattern Analysis and Machine Intelligence*, vol.38, no.1, pp.159-171, January 2016 (T-PAMI).

Yaniv Taigman, **Ming Yang**, Marc'Aurelio Ranzato, Lior Wolf. Web-scale training for face identification. *IEEE Conference on Computer Vision and Pattern Recognition*, Boston, MA, June 8-10, 2015 (CVPR'2015).

Shiliang Zhang, **Ming Yang**, Xiaoyu Wang, Yuanqing Lin, Qi Tian. Semantic-aware co-indexing for image retrieval. *IEEE Trans. on Pattern Analysis and Machine Intelligence*, vol.37, no.13, pp.2573-2587, December 2015, (T-PAMI).

Xiaoyu Wang, **Ming Yang**, Shenghuo Zhu, Yuanqing Lin. Regionlets for generic object detection. *IEEE Trans. on Pattern Analysis and Machine Intelligence*, vol.37, no.10, pp.2071-2084, October, 2015 (T-PAMI).

Shaoting Zhang, **Ming Yang**, Timothee Cour, Kai Yu, Dimitris Metaxas. Query specific rank fusion for image retrieval. *IEEE Trans. on Pattern Analysis and Machine Intelligence*, vol.37, no.4, pp.803-815, April 2015 (T-PAMI).

Yaniv Taigman, **Ming Yang**, Marc'Aurelio Ranzato, Lior Wolf. DeepFace: closing the gap to human-Level performance in face verification. *IEEE Conference on Computer Vision and Pattern Recognition*, Columbus, OH, June 24-27, 2014 (CVPR'2014).

Wengang Zhou, **Ming Yang**, Houqiang Li, Xiaoyu Wang, Yuanqing Lin, Qi Tian. Towards codebook-free: scalable cascaded hashing for mobile image search. *IEEE Trans. on Multimedia*, vol.16, no.3, pp.601-611, April 2014 (T-MM).

Chengjiang Long, Xiaoyu Wang, Gang Hua, **Ming Yang**, Yuanqing Lin. Accurate object detection with location relaxation and regionlets re-localization.

Asian Conf. on Computer Vision, Singapore, Nov. 1-5, 2014 (ACCV'2014).

Shiliang Zhang, **Ming Yang**, Xiaoyu Wang, Yuanqing Lin, Qi Tian. Semantic-aware co-indexing for image retrieval. *IEEE Conference on Computer Vision*, Sydney, Australia, December 3-6, 2013 (ICCV'2013).

Xiaoyu Wang, **Ming Yang**, Shenghuo Zhu, Yuanqing Lin. Regionlets for generic object detection. *IEEE Conference on Computer Vision*, Sydney, Australia, December 3-6, 2013 (ICCV'2013).

Gang Hua, Chengjiang Long, **Ming Yang**, Yan Gao. Collaborative active learning of a kernel machine ensemble for recognition. *IEEE Conference on Computer Vision*, Sydney, Australia, December 3-6, 2013 (ICCV'2013).

Shuiwang Ji, Wei Xu, **Ming Yang**, Kai Yu. 3D convolutional neural networks for human action recognition. *IEEE Trans. on Pattern Analysis and Machine Intelligence*, vol.35, no.1, pp.221-231, January 2013 (T-PAMI).

Shaoting Zhang, **Ming Yang**, Timothee Cour, Kai Yu, Dimitris Metaxas. Query specific fusion for image retrieval. *European Conference on Computer Vision*, Firenze, Italy, pp.660-673, October 7-13, 2012, (ECCV'2012).

Xiaoyu Wang, **Ming Yang**, Timothee Cour, Shenghuo Zhu, Kai Yu, Tony Han. Contextual weighting for vocabulary tree based image retrieval. *IEEE Conference on Computer Vision*, Barcelona, Spain, pp.209-216, November 6-13, 2011 (ICCV'2011).

Ming Yang, Shenghuo Zhu, Fengjun Lv, Kai Yu. Correspondence driven adaptation for human profile recognition. *IEEE Conference on Computer Vision and Pattern Recognition*, Colorado Springs, CO, pp.505-512, June 21-23, 2011 (CVPR'2011).

Junsong Yuan, **Ming Yang**, Ying Wu. Mining discriminative co-occurrence patterns for visual recognition. *IEEE Conference on Computer Vision and Pattern Recognition*, Colorado Springs, CO, pp.2777-2784, June 21-23, 2011 (CVPR'2011).

Yuanqing Lin, Fengjun Lv, Shenghuo Zhu, **Ming Yang**, Timothee Cour, Kai Yu, Liangliang Cao, Thomas Huang. Large-scale image classification: fast feature extraction and SVM training. *IEEE Conference on Computer Vision and Pattern Recognition*, Colorado Springs, CO, pp.1689-1696, June 21-23, 2011 (CVPR'2011).

Ming Yang, Kai Yu. Real-time clothing recognition in surveillance videos. *IEEE International Conference on Image Processing*, Brussels, Belgium, pp.2937-2940, September 11-14, 2011 (ICIP'2011).

Ming Yang, Kai Yu. Adapting Gender and Age Recognition System for Mobile

Platforms. *2011 Third Chinese Conference on Intelligent Visual Surveillance*, Beijing, China, December 1-2, 2011 (IVS'2011).

Xiaoyu Wang, **Ming Yang**, Kai Yu. Efficient Re-Ranking in Vocabulary Tree Based Image Retrieval. *45th Asilomar Conference on Signals, Systems and Computers*, invited paper, Pacific Grove, CA, November 6-9, 2011.

Ming Yang and Ying Wu. Context-aware and Attentional Visual Tracking, *VDM Verlag Dr. Muller*, 2010, ISBN: 978-3-639-24303-1.

Ming Yang, James Crenshaw, Bruce Augustine, Russell Mareachen and Ying Wu. Adaboost-based face detection for embedded systems. *Computer Vision and Image Understanding*, vol.114, no.11, pp.1116-1125, November, 2010 (CVIU).

Shuiwang Ji, Wei Xu, **Ming Yang**, Kai Yu. 3D convolutional neural networks for human action recognition. *International Conference on Machine Learning*, pp.495-502, Haifa, Israel, June 21-24, 2010 (ICML'2010).

Ming Yang, Fengjun Lv, Wei Xu, Yihong Gong. Detection driven adaptive multi-cue integration for multiple human tracking. *IEEE International Conference on Computer Vision*, Kyoto, Japan, pp.1554-1561, Sept. 29 - Oct. 2, 2009 (ICCV'2009).

Ming Yang, Fengjun Lv, Wei Xu, Kai Yu, Yihong Gong. Human action detection by boosting efficient motion features. *IEEE Workshop on Video-oriented Object and Event Classification in Conjunction with ICCV*, pp.522-529, Kyoto, Japan, Sept.28, 2009 (VOEC'2009).

Guangyu Zhu, **Ming Yang**, Kai Yu, Wei Xu, Yihong Gong. Detecting video events based on action recognition in complex scenes using spatio-temporal descriptor. *ACM International Conference on Multimedia*, pp.165-174, Beijing, China, October 19-24, 2009, full paper, (ACM MM'2009).

Ming Yang, Zhimin Fan, Jialue Fan, Ying Wu. Tracking non-stationary visual appearances by data-driven adaptation. *IEEE Trans. on Image Processing*, vol.18, no.7, pp.1633-1644, July 2009 (T-IP).

Ming Yang, Ying Wu, Gang Hua. Context-aware visual tracking. *IEEE Trans. on Pattern Analysis and Machine Intelligence*, vol.31, no.7, pp.1195-1209, July 2009 (T-PAMI).

Yan Gao, **Ming Yang**, Alok Choudhary. Semi Supervised Image Spam Hunter: a Regularized Discriminant EM Approach. *The International Conference on Advanced Data Mining and Applications*, Beijing, China, pp.152-164, August 2009 (ADMA'2009).

Ming Yang, Ying Wu. Granularity and elasticity adaptation in visual tracking.

IEEE Conference on Computer Vision and Pattern Recognition, Anchorage, AK, June 24-26, 2008 (CVPR'2008).

Ming Yang, Qiong Liu, Thea Turner, Ying Wu. Vital sign estimation from passive thermal video. *IEEE Conference on Computer Vision and Pattern Recognition*, Anchorage, AK, June 24-26, 2008 (CVPR'2008).

Jialue Fan, **Ming Yang**, Ying Wu. A bi-subspace model for robust visual tracking. *IEEE International Conference on Image Processing*, San Diego, CA, pp.2660-2663, October 12-15, 2008 (ICIP'2008).

Yan Gao, **Ming Yang**, Xiaonan Zhao, Bryan Pardo, Ying Wu, Thrasyvoulos Pappas, Alok Choudhary. Image spam hunter. *IEEE International Conference on Acoustics, Speech, and Signal Processing*, Las Vegas, NV, pp.1765-1768, March 30 - April 4, 2008 (ICASSP'2008).

Ming Yang, Ting Yu, Ying Wu. Game-theoretic multiple target tracking. *IEEE International Conference on Computer Vision*, Rio de Janeiro, Brazil, October 14-20, 2007 (ICCV'2007).

Ming Yang, Junsong Yuan, Ying Wu. Spatial selection for attentional visual tracking. *IEEE Conference on Computer Vision and Pattern Recognition*, Minneapolis, June 18-23, 2007 (CVPR'2007).

Shengyang Dai, **Ming Yang**, Ying Wu, Aggelos K. Katsaggelos. Detector Ensemble. *IEEE Conference on Computer Vision and Pattern Recognition*, Minneapolis, June 18-23, 2007 (CVPR'2007).

Junsong Yuan, Ying Wu, **Ming Yang**. Discovery of collocation patterns: from visual words to visual phrases. *IEEE Conference on Computer Vision and Pattern Recognition*, Minneapolis, June 18-23, 2007 (CVPR'2007).

Zhimin Fan, **Ming Yang**, Ying Wu. Multiple collaborative kernel tracking. *IEEE Trans. on Pattern Analysis and Machine Intelligence (T-PAMI)*, vol.29, no.7, pp.1268-1273, July 2007.

Junsong Yuan, Ying Wu, **Ming Yang**. Frequent itemsets to semantically meaningful visual patterns. *ACM International Conference on Knowledge Discovery and Data Mining*, San Jose, Aug 13-15, 2007 (ACM SIGKDD'2007).

Ming Yang, Senthil Periaswamy, Ying Wu. False positive reduction in lung GGO nodule detection with 3D volume shape descriptor. *IEEE International Conference on Acoustics, Speech, and Signal Processing*, Honolulu, HI, vol.1 pp.437-440, April 15-17, 2007 (ICASSP'2007).

Ming Yang, Ying Wu, Shihong Lao. Mining auxiliary objects for tracking by multibody grouping. *IEEE International Conference on Image Processing*, San Antonio, TX, vol.3, pp.361-364, September 16-19, 2007 (ICIP'2007).

Ming Yang, Ying Wu, Shihong Lao. Intelligent collaborative tracking by mining auxiliary objects. *IEEE Conference on Computer Vision and Pattern Recognition*, New York City, NY, vol.1, pp.697-704, June 17-22, 2006 (CVPR'2006).

Zhimin Fan, **Ming Yang**, Ying Wu, Gang Hua, Ting Yu. Efficient optimal kernel placement for reliable visual tracking. *IEEE Conference on Computer Vision and Pattern Recognition*, New York City, NY, vol.1, pp.658-665, June 17-22, 2006 (CVPR'2006).

Shengyang Dai, **Ming Yang**, Ying Wu, Aggelos K.Katsaggelos. Tracking motion-blurred targets in video. *IEEE International Conference on Image Processing*, Atlanta, GA, pp.2389-2392, Oct. 8-11, 2006 (ICIP'2006).

Ming Yang, James Crenshaw, Bruce Augustine, Russell Mareachen, Ying Wu. Face detection for automatic exposure control in handheld camera. *IEEE International Conference on Computer Vision Systems*, New York City, NY, pp.17, Jan. 5-7, 2006 (ICVS'2006).

Ming Yang, Ying Wu. Tracking non-stationary appearances and dynamic feature selection. *IEEE Conference on Computer Vision and Pattern Recognition*, San Diego, CA, vol.2, pp.1059-1066, June 20-26, 2005 (CVPR'2005).

Zhimin Fan, Ying Wu, **Ming Yang**. Multiple collaborative kernel tracking. *IEEE Conference on Computer Vision and Pattern Recognition*, San Diego, CA, vol.2, pp.502-509, June 20-26, 2005 (CVPR'2005).

Ming Yang, Huijuan Cui, Kun Tang. Efficient tree structured motion estimation using successive elimination. *IEE Proceedings - Vision, Image and Signal Processing*, vol.151, no.5, pp.369-377, October 2004 (IEE-VIS).

Ming Yang, Wensheng Wang. Fast macroblock mode selection based on motion content classification in H.264/AVC. *IEEE International Conference on Image Processing*, Singapore, pp.741-744, October 24-27, 2004 (ICIP'2004).

Ming Yang, Huijuan Cui, Kun Tang. Successive elimination algorithm for tree structure motion estimation. *Journal of Tsinghua University - Science and Technology*, vol.44, no.6, pp.825-828, 832, June 2004. (In Chinese).

Ming Yang, Wen Du, Huijuan Cui, Kun Tang. PC-based MPEG-II decoder for digital video broadcast-satellite systems. *Journal of Tsinghua University - Science and Technology*, vol.43, no.7, pp.930-933, July 2003. (In Chinese).

Zhijin Xia, **Ming Yang**, Huijuan Cui, Kun Tang. Efficient error detection algorithm for arithmetic codes with multiple forbidden symbols. *Journal of Tsinghua University - Science and Technology*, vol.45 no.7, pp.935-938, July 2005. (In Chinese).

Wensheng Wang, **Ming Yang**, Huijuan Cui, Kun Tang. Adaptive early ter-

mination algorithm for motion estimation in H.264. *Journal of Tsinghua University - Science and Technology*, vol.44, no.11, pp.1426-1429, Nov. 2004. (In Chinese).

Chen Fan, **Ming Yang**, Huijuan Cui, Kun Tang. Fixed-length error resilient code and its application in video coding. *Chinese Journal of Electronics*, vol.12, no.4, pp.612-615, Oct. 2003.

Chen Fan, **Ming Yang**, Huijuan Cui, Kun Tang. Convergence analysis on the iterative decoding of variable-length codes. *IEE Electronics Letters*, vol.38, no.11, pp.520-522, 2002.

Chen Fan, **Ming Yang**, Huijuan Cui, Kun Tang. Iterative decoding of variable-length error correcting code, *International Conf. on Telecommunication*, Beijing, pp.202-212, Jun. 2002. (ICT'2002).

Chen Fan, **Ming Yang**, Huijuan Cui, Kun Tang. Design and implementation of video communication system based on IEEE1394 bus, *Application Research of Computer*, choice expand edition, pp.77, pp.83, 2003. (In Chinese).

Notebook papers:

Ming Yang, Yuanqing Lin, Fengjun Lv, Shenghuo Zhu, Kai Yu, et. al., Video semantic indexing using image classification, *TRECVID*, 2010.

Ming Yang, Shuiwang Ji, Wei Xu, Jinjun Wang, Fengjun Lv, Kai Yu, Yihong Gong, et. al., Detecting Human Actions in Surveillance Videos, *TRECVID*, 2009.

Ming Yang, Fengjun Lv, Wei Xu, Kai Yu, Zhao Zhao, Guangyu Zhu, Yihong Gong, et. al., Surveillance Event Detection, *TRECVID*, 2008.

PATENTS:

Yaniv Taigman, **Ming Yang**, Marc'Aurelio Ranzato, System and methods for facial representation, US patent 10,095,917, granted on 10/9/2018, application No. 14/0530585, PCT/US2014/063722, filed on 10/31/2014.

Yunchao Gong, Liu Liu, Lubomir Bourdev, **Ming Yang**, Rob Fergus, System and methods for utilizing compressed neural networks to perform media content processing, US patent, application pending, No.14/982874, filed on 12/2015.

Xiaoyu Wang, **Ming Yang**, Yuanqing Lin, Shenghuo Zhu, Window dependent feature regions and strict spatial layout for object detection, US patent 9,020,248, granted on 4/2015, application No.14/108280, filed on 12/2013.

Xiaoyu Wang, Shenghuo Zhu, **Ming Yang**, Yuanqing Lin, Dimension-wise spatial layout importance selection: an alternative way to handle object deformation, US patent 9,020,198, granted on 4/2015, application No. 14/108212,

filed on 12/2013.

Xiaoyu Wang, Shenghuo Zhu, **Ming Yang**, Yuanqing Lin, Selective max-pooling for object detection, US patent 9,042,601, granted on 5/2015, application No.14/108295, filed on 12/2013.

Ming Yang, Xiaoyu Wang, Yuanqing Lin, Qi Tian, Semantic-aware co-indexing for near-duplicate image retrieval, US patent 8,891,908, granted on 11/2014, application No.14/077424, filed on 11/2013.

Ming Yang, Shaoting Zhang, Kai Yu, Query specific fusion for image retrieval, US patent 8,762,390, granted on 6/2014, application No.13/679317, filed on 11/2012.

Ming Yang, Xiaoyu Wang, Yuanqing Lin, Kai Yu, Fast image classification by vocabulary tree based image retrieval, US patent 8,787,682, granted on 7/2014, application No.13/339240, filed on 12/2011.

Xiaoyu Wang, **Ming Yang**, Timothee Cour, Shenghuo Zhu, Kai Yu, Contextual weighting and efficient re-ranking for vocabulary tree based image retrieval, US patent 8,892,542, granted on 11/2014, application No.13/339227, filed on 12/2011.

Ming Yang, Kai Yu, Real-time Clothing recognition system in surveillance videos, US patent 8,379,920, granted on 2/2013, application No.12/985003, filed on 01/2011.

Ming Yang, Fengjun Lv, Shenghuo Zhu, Kai Yu, Systems and methods for determining personal characteristics, US patent 8,582,807, granted on 11/2013, application No.12/790979, filed on 05/2010.

Shuiwang Ji, Wei Xu, **Ming Yang**, Kai Yu, 3D convolutional neural networks for automatic human action recognition, US patent 8,345,984, granted on 1/2013, application No.12/814328, filed on 06/2010.

Qiong Liu, **Ming Yang**, Althea Turner, System and methods for vital sign estimation from passive thermal video, US patent 8,149,273, granted on 4/2012, application No.12/171273, filed on 7/2008.

Ming Yang, Ying Wu, Shengyang Dai, Shihong Lao, Robust object tracking system, US patent 8,050,453, granted on 11/2011, application No.11/453549, filed on 06/2006.

SERVICES:

Reviewer for the following journals:

- Int'l Journal of Computer Vision (IJCV)
- IEEE Trans. on Pattern Analysis and Machine Intelligence (T-PAMI)

- IEEE Trans. on Image Processing (T-IP)
- IEEE Trans. on Multimedia (T-MM)
- IEEE Trans. on Circuits and Systems for Video Technology (T-CSVT)
- IEEE Trans. on Systems, Man, and Cybernetics, Part B: Cybernetics
- IEEE Signal Processing Magazine (SPM)
- Computer Vision and Image Understanding (CVIU)
- ACM Trans. on Intelligent Systems and Technology (ACM TIST)

Program Committee on the following conferences:

- IEEE Int'l Conf. on Computer Vision (ICCV 11, 13, 15, 17, 19)
- IEEE Conf. on Computer Vision & Pattern Recognition (CVPR 12, 13, 14, 15, 16, 17, 18, 19, 20)
- European Conf. on Computer Vision (ECCV 12, 18)
- ACM Int'l Conf. on Multimedia (ACM MM 10, 12, 14, 15)
- Asian Conf. on Computer Vision (ACCV 12, 14)
- IEEE Int'l Conf. on Multimedia & Expo (ICME 11, 12, 13, 14)
- Neural Information Processing Systems (NIPS 11, 14, 20)

AWARDS:

- Development of real-world object recognition technologies and contribution to GAZIRU service, 1st grade IARD unit contribution award in NEC R&D, joint with Shenghuo Zhu, Yuanqing Lin, and Moto Sato, Nov. 2012.
- Top performer of the image classification task in ImageNet Challenge, 2010.
- Top performer in TREC Video Retrieval Evaluation of surveillance event detection, 2008–2009.
- Outstanding performance competition finalist in Imagine Cup Worldwide .NET Competition, Microsoft at Barcelona, Spain, Jun. 2003.
- Third place in Microsoft Cup University VS.Net Software Development Competition in Asia-Pacific, Feb. 2003.
- First prize in Microsoft Cup University VS.Net Software Development Competition in China. Visit Microsoft Research in Redmond, Seattle USA, Aug. 2002.
- Distinguished graduate of Tsinghua University, Jul. 2001.
- Excellent Student Scholarship, Oct. 2003 and Oct. 2002.
- Guanghua Scholarship, Sept. 2000 and Sept. 1999.

PROJECTS:

- Proposed and implemented a large-scale near duplicate image retrieval system, 2010-2012.
- Designed and implemented the embedded gender and age recognition system on Android phones, 2010–2011.
- Designed and implemented the NEC’s system for TREC Video Retrieval Evaluation of semantic image indexing, 2010.
- Designed and implemented the NEC’s system for TREC Video Retrieval Evaluation of surveillance event detection, 2008–2009.
- Implemented a real-time head tracking system with OpenCV library, 2005–2006.
- Implemented and optimized a real-time H.264 codec on the Pentium-IV platform with SSE2 optimization, 2003–2004.
- Designed and implemented a medical image processing software based on DICOM and took charge of the software architecture design and image processing algorithms, 2002.
- Implemented and optimized a practical MPEG-II Software decoder in a DVB-S system for remote education, 2001.

SKILLS:

- Proficient in C, C++, and MFC programming.
- Proficient in Open Source Computer Vision Library (OpenCV).
- Familiar with Python, Perl, and Matlab languages.
- Familiar with Java, Hadoop, Dumbo, and Django.
- Familiar with Android development.
- Familiar with video coding algorithms and international standards such as H.264/MPEG-IV AVC Part10, MPEG-II, H.263.