

YINGLI TIAN, PHD, FELLOW IEEE

Professor
Department of Electrical Engineering,
The City College, City University of New York

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RESEARCH AREAS:

Computer vision, pattern recognition, machine learning, assistive technology, and image and video processing.

EDUCATION:

Ph.D. in Electronic Engineering, Chinese University of Hong Kong, HK, 1996.

M.S. in Thermophysical Engineering, TianJin University, P. R. China, 1990.

B.S. in Precision Instrument and Opto-Electronics Engineering, TianJin University, P. R. China, 1987.

PROFESSIONAL EXPERIENCE:

- **Professor** (8/2013-Date), **Associate Professor** (8/2008-7/2013), Department of Electrical Engineering, The City College, The City University of New York
- **Professor** (8/2013-date), **Associate Professor** (8/2008-7/2013), Department of Computer Science, The Graduate Center, The City University of New York
- **Director** (8/2008-Date), CCNY Media Laboratory, The City College of New York
<http://media-lab.ccny.cuny.edu/>
- **Visiting Professor** (5/2011 To 7/2011), Naval Undersea Warfare Center, Newport, RI
- **Visiting Professor** (5/2010 To 8/2010), DHS CCICADA Center, Rutgers University, NJ
- **Visiting Professor** (5/2009 To 7/2009), Microsoft Research, Redmond, WA
- **Adjunct Professor** (1/2008 To 7/2008), Department Of Computer Science, Columbia University, NY
- **Research Staff Member** (3/2001 To 8/2008), IBM T. J. Watson Research Center, Hawthorne, NY
- **Postdoctoral Research Associate** (8/1998 To 2/2001), Robotics Institute, Carnegie

Mellon University, Pittsburgh, PA

- **Associate Professor** (9/1996 To 7/1998), National Laboratory of Pattern Recognition, Chinese Academy of Sciences, Beijing, China
- **Research Assistant** (9/1992 To 8/1996), Dept. of Electronic Engineering, The Chinese University of Hong Kong, Hong Kong
- **Assistant Professor** (3/1990 To 8/1992), National Laboratory of Pattern Recognition, Chinese Academy of Sciences, Beijing, China

AWARDS AND HONORS:

- **Fellow, IEEE** (Institute of Electrical and Electronics Engineers), Class of 2018. for contributions in automatic facial expression analysis and human activity understanding. <https://www.ccny.cuny.edu/news/ccny%E2%80%99s-yingli-tian-beats-odds-become-ieee-fellow>
- **Best Paper Award**, IEEE Int. Conf. on CYBER Technology in Automation, Control, and Intelligent Systems (IEEE-CYBER), 2017.
- **Best Paper Award**, Journal of Visual Communication and Image Representation, 2015.
- **Keynote Speaker**, IEEE International Conference on Computer Science and Automation Engineering, 2013.
- **Keynote Speaker**, International Conference on Computer Graphics, Image, and Visualization, 2009
- **Best System Paper award**, IEEE Workshop on Multi-modal Sentient Computing: Sensors, Algorithms, and Systems, 2007.
- **The City University of New York “Salute to Scholars”** for outstanding scholarly achievements and contributions to the creation and transmittal of knowledge, 2009, 2010, 2011, 2012, 2013, 2014, 2015.
- **IBM Outstanding Innovation Achievement Award** in Application for: IBM Smart Surveillance System: Accomplishment Awards, 2007.
- **IBM Invention Achievement Award**, 2002, 2003, 2005, 2006, 2007
- **29 Issued Patents.**
- **Publication Impact:** ~200 publications, **12,500+ citations**, **h-index: 50** (based on Google Scholar).

PROFESSIONAL ACTIVITIES AND SERVICES:

Associate Editors:

- Computer Vision and Image Understanding, 2011- date
- Journal of Visual Communication and Image Representation, 2016 – date

Conference Chairs:

- Workshop Co-chair, IEEE Conference on Automatic Face and Gesture Recognition, 2018.
- Doctoral Consortium Co-Chair: IEEE International Conference on Multimedia and Expo, 2014.
- Registration Co-Chair: IEEE International Conference on Multimedia and Expo, 2016
- Program Co-Chair and Poster/Demo Co-Chair: IEEE Workshop on Multimodal and Alternative Perception for Visually Impaired People, 2013.
- Workshop Co-Chair, ICPR, 2017
- Demonstration Chair: ACM International Conference on Multimedia Retrieval, 2016
- Sponsorship Chair: International Conference on Multimodal Interaction, 2015
- General Chair: Greater New York Area (GNY) Vision/Multimedia Meeting, 2013
- Program co-chair: Greater New York Area (GNY) Vision/Multimedia Meeting, 2012
- Program co-chair: Special Session of Asia-Pacific Signal and Information Processing Association Annual Summit and Conference, 2012
- Section Chair: International Conference on Computer Graphics, Image, and Visualization, 2009
- Section Chair: IEEE International Workshop on Object Tracking and Classification beyond Visible Spectrum, 2008.
- Program Chair: IEEE Workshop on Multi-modal Sentient Computing: Sensors, Algorithms, and Systems, 2007.

Committee Members:

- IEEE International Conference on Computer Vision, 2015.
- IEEE Conference on Computer Vision and Pattern Recognition, 2015-2017
- IEEE Conference on Automatic Face and Gesture Recognition, 2011, 2013, 2015, 2017.
- IEEE International Conference on Image Processing, 2014, 2015
- International Congress on Image and Signal Processing, 2010
- International Workshop on Emotion Synthesis, Representation, and Analysis in Continuous spaces, 2011.
- IEEE International Conference on Emerging Signal Processing Applications, 2012.
- IEEE International Conference on Multimedia and Expo, 2011, 2013, 2016
- International Conference on Development and Learning, 2009
- International Conference on Distributed Smart Cameras, 2009.
- International Workshop on Moving Cameras Meet Video Surveillance: From Body Cameras to Drones, 2016.
- International Workshop on Multimedia Signal Processing, 2011.
- The Wireless and Optical Communications Conference, 2013.
- Steering Committee and Program Committee: International Health Informatics Symposium, 2010
- Steering Committee: GNY Vision/Multimedia Meeting, 2014
- International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications, 2012-2017
- Workshop on Use of Context in Vision Processing, 2009-2011
- ACM-MM, 2009-2010

- ICPR, 2012
- ACCV, 2009, 2016
- ECCV, 2016
- International conference on Computer Graphics, Imaging and Visualization, 2009, 2012

Invited talks:

- MIT,
- Graduate Center, CUNY,
- HKUST,
- CUHK,
- NLPR,
- IBM China Research Lab,
- Microsoft Research Asian,
- Microsoft Research,
- Yahoo Labs,
- Google,
- SRI,
- IBM T. J. Watson Research Center,
- SXSW'14,
- Tsingjua University,
- Beihang University,
- Navy Underwater Warfare Center,
- DHS CCICADA Center,
- University of Delaware,
- Rutgers University,
- Stevens Institute of Technology,
- Temple University.

Reviewers:

- **Conferences:** ICASSP'03, ICME'03, ICASSP'04, CVPR'04, ICMI'04, ICASSP'05, ICCV'05, CVPR'07, ICCV'07, ACCV'09, ACM_MM'09, CGIV'09, ICDL'09, ICDSC'09, UCVF'09, ACM_MM'10, CISP'10, IHI'10, UCVF'10, EMOSPACE'11, FG'11, IVS'11, ESPA'12, MMSP'11, UCVF'11, ICPR'12, CBAR'12, CGIV'12, VISAPP'12, FG'13, ICME'13, WOCC'13, VISAPP'13, ICIP'14, VISAPP'14, ICIP'15, FG'15, ICCV'15, CVPR'15, CVPR'16, ACCV2016, ECCV'16, ICME'16, MCMVS'16, VISAPP'16, ACM_MM'17, BMVC'17, CVPR'17, FG'17, ICCV'17, ICIP'17, VISAPP'17, CVPR'18, FG'18,
- **Journals:** TPAMI, TIP, TMM, CVIU, PR, IJCV, IJPRAI, T-SMCC, JVCI, JIVP, T-SMCB, MVAP, JSP, TAFFC, TBME, TCSVT, TITS, T-ACM, IVCJ, ACM-TIST, ACM-TSN, etc.

Other Services:

- NSF Proposal Review Panelist, 2008-2016
- NIH Proposal Review Panelist, 2013, 2015-2017
- Swiss NSF Proposal Review Panelist, 2016
- CAST-USA board member
- Leader of CCNY as an official partner of DHS CCICADA Center
- Panelist on Imaging & Visualization Mini-Conference "Bridging the Gap between University Research and Business Applications", May, 2005. CUNY Graduate Center.
- PSC-CUNY Panelist.

Thesis committee member:

- TieCheng Liu (Columbia University, 2003),
- Bushra Ahsan (The City University of New York, 2010),
- Peng Yang (Rutgers University, 2011),
- Clara Nieto-wire (The City University of New York, 2012),
- Biao Jiang (City College of New York, 2013),
- Tao Wang (City University of New York, 2012),
- Shizhi Chen (City College of New York, 2013),
- Chucai Yi (City University of New York, 2014),
- Samleo Joseph (City College of New York, 2014),
- Xiaodong Yang (City College of New York, 2015),
- Juan Liu (City University of New York, 2015),
- Ivan Dryanovski (City University of New York, 2015),
- Edgardo Molina (City University of New York, 2015),
- Mohamad Hoda (University of Ottawa, 2015),
- Xiaochen Zhang (City College of New York, 2016),
- Chenyang Zhang (City College of New York, 2016),
- Wai Khoo (City University of New York, 2016),
- Allan Zelener (City University of New York, 2017),
- Wei Li (City College of New York, 2017),
- Yang Xian (City University of New York, 2017),
- Farnaz Abtahi (City University of New York, 2017).

PUBLICATIONS (~200 PUBLICATIONS, H-Index=50 and 12,400+ citations based on Google Scholar):**Peer-reviewed Journal Papers:**

1. C. Zhang, Y. Tian, X. Guo, and J. Liu, DAAL: Deep Activation-based Attribute Learning for Action Recognition in Depth Videos, *Computer Vision and Image Understanding*, 2017, DOI: 10.1016/j.cviu.2017.11.008.
2. Y. Xian, Z. Petrou, Y. Tian, and W. Meier, Super-Resolved Fine Scale Sea Ice Motion Tracking, *IEEE Transactions on Geoscience and Remote Sensing*, Vol. 55, Issue 10, 2017.
3. Z. Petrou and Y. Tian, High Resolution Sea Ice Motion Estimation With Optical Flow Using Satellite Spectroradiometer Data, *IEEE Transactions on Geoscience and Remote Sensing*, Vol. 55, No. 3, March 2017.
4. Y. Xian, X. Rong ; X. Yang, and Y. Tian, Evaluation of Low-Level Features for Real-World Surveillance Event Detection, *IEEE Transactions on Circuits and Systems for Video Technology*, pp. 624-634, Vol. 27, No. 3, March 2017.
5. X. Yang and Y. Tian, Super Normal Vector for Human Activity Recognition with Depth Cameras, *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Vol. 39, No. 5, pp. 1028-1039, May 2017.
6. Z. Liu, C. Zhang and Y. Tian, 3D-based Deep Convolutional Neural Network for Action Recognition with Depth Sequences, *Image and Vision Computing*, Vol. 55, Part 2, pp. 93-100, November 2016.
7. Y. Xian and Y. Tian, Single Image Super-Resolution via Internal Gradient Similarity, *Journal of Visual Communication and Image Representation*, pp. 91-102, Vol. 35, Feb. 2016.
8. C. Zhang and Y. Tian, Histogram of 3D Facets: A Depth Descriptor for Human Action and Hand Gesture Recognition, *Computer Vision and Image Understanding*, Volume 139, Pages 29–39, October 2015.
9. L. Tian, C. Yi, and Y. Tian, Detecting Good Quality Frames in Videos from Mobile Camera for Blind Navigation, *Journal of Computer Vision and Image Processing*, Vol. 5, No. 10, October 2015.
10. S. Chen, X. Yang, and Y. Tian, Discriminative Hierarchical K-Means Tree for Large-Scale Image Classification, *IEEE Transactions on Neural Networks and Learning Systems*, Vol. 26, No. 9, 2015.
11. S. Chen and Y. Tian, Pyramid of Spatial Relations for Remotely Sensed Land Use Classification, *IEEE Transactions on Geoscience and Remote Sensing*, Vol. 53, No. 4, pp1947-1957, April 2015.
12. C. Yi and Y. Tian, "Scene Text Recognition in Mobile Applications by Character Descriptor and Structure Configuration," *IEEE Transactions on Image Processing*, Vol. 23, No. 7, pp2972-2982, July 2014.
13. X. Yang, S. Yuan, and Y. Tian, "Assistive Clothing Pattern Recognition for Visually Impaired People," *IEEE Transactions on Human-Machine Systems*, Vol. 44, No. 2, April, 2014.
14. C. Yi, Y. Tian, and A. Arditi, "Portable Camera-based Assistive Text and Product Label Reading from Hand-held Objects for Blind Persons," *IEEE/ASME Transactions on Mechatronics*, Vol. 19, No. 3, pp808-817, June 2014. <http://dx.doi.org/10.1109/TMECH.2013.2261083>
15. S. Wang, H. Pan, C. Zhang, and Y. Tian, RGB-D Image-Based Detection of Stairs, Pedestrian Crosswalks and Traffic Signs, *Journal of Visual Communication and Image*

Representation (JVCIR), Vol. 25, pp263-272, 2014.
<http://dx.doi.org/10.1016/j.jvcir.2013.11.005>

16. X. Yang* and Y. Tian[#], Effective 3D Action Recognition Using Eigenjoints, *Journal of Visual Communication and Image Representation (JVCIR)*, Special Issue on Visual Understanding and Applications with RGBD Cameras, Volume 25, Issue 1, January 2014, Pages 2–11.
17. X. Yang and Y. Tian. Texture Representations Using Subspace Embeddings. *Pattern Recognition Letters (PRL)*, 34(10):1130-1137, 2013.
18. F. Hasanuzzaman, X. Yang, and Y. Tian, Monitoring Activity of Taking Medicine by Incorporating RFID and Video Analysis, *Network Modeling Analysis in Health Informatics and Bioinformatics*, Volume 2, Issue 2, pp 61-70. July 2013. DOI: 10.1007/s13721-013-0025-y.
19. S. Wang, X. Yang, and Y. Tian, Detecting Signage and Doors for Blind Navigation and Wayfinding, *Network Modeling Analysis in Health Informatics and Bioinformatics*, July 2013, Volume 2, Issue 2, pp 81-93.
20. C. Yi, R. Flores, R. Chinha, and Y. Tian, Finding Objects for Assisting Blind People, *Network Modeling Analysis in Health Informatics and Bioinformatics*, July 2013, Volume 2, Issue 2, pp 71-79. DOI: 10.1007/s13721-013-0026-x
21. C. Yi and Y. Tian, Text Extraction from Scene Images by Character Appearance and Structure Modeling, *Computer Vision and Image Understanding*, Vol. 117, No. 2, pp. 182-194, 2013. DOI: 10.1016/j.cviu.2012.11.002
22. C. Zhang and Y. Tian, “RGB-D Camera-based Daily Living Activity Recognition,” *Journal of Computer Vision and Image Processing*, Vol. 2, No. 4, December 2012.
23. A. Arditi and Y. Tian, “User Interface Preferences in the Design of a Camera-Based Navigation and Wayfinding Aid,” *Journal of Visual Impairment & Blindness*, Vol. 107, Number 2, pp118-129, March-April, 2013.
24. S. Chen, Y. Tian, Q. Liu, and D. Metaxas, Recognizing Expressions from Face and Body Gesture by Temporal Normalized Motion and Appearance Features, *Image and Vision Computing*, Vol. 31, Issue 2, February 2013, Pages 175–185, DOI: 10.1016/j.imavis.2012.06.014
25. C. Yi and Y. Tian, “Localizing Text in Scene Images by Boundary Clustering, Stroke Segmentation, and String Fragment Classification,” *IEEE Transactions on Image Processing*, Vol. 117, No. 2, pp. 182-194, 2013. DOI: 10.1016/j.cviu.2012.11.002.
26. Y. Tian, X. Yang, C. Yi, and A. Arditi, “Toward a Computer Vision-based Wayfinding Aid for Blind Persons to Access Unfamiliar Indoor Environments,” *Machine Vision and Applications*, Issue 24, No. 3, April 2013, pp. 521-535. DOI: 10.1007/s00138-012-0431-7. NIHMSID # 371367
27. S. Wang, C. Yi, and Y. Tian, “Signage Detection and Recognition for Blind Persons to Access Unfamiliar Environments,” *Journal of Computer Vision and Image Processing*, Vol. 2, No. 2, 2012.
28. Y. Tian and S. Chen, Understanding Effects of Image Resolution for Facial Expression Analysis, *Journal of Computer Vision and Image Processing*, Vol. 2, No. 1, 2012.
29. S. Chen and Y. Tian, Describing Visual Scene through EigenMaps, *Journal of Computer Vision and Image Processing*, Vol. 2, No. 1, March 2012.

30. H. Gunes, C. Shan, S. Chen, and Y. Tian, "Bodily Expression for Automatic Affect Recognition", In *Advances in Emotion Recognition*, A. Konar, A. Chakraborty (Eds.), Wiley-Blackwell, 2012.
31. C. Yi and Y. Tian. Assistive Text Reading from Complex Background for Blind Persons, The refereed post-proceedings of selected papers in the 4th International Workshop on Camera-Based Document Analysis and Recognition (CBDAR'11), Lecture Notes in Computer Science series, Vol. 7139, by Springer, Masakazu Iwamura and Faisal Shafait (Eds), 2011.
32. F. Hasanuzzaman, X. Yang, and Y. Tian, Robust and Effective Component-based Banknote Recognition for the Blind, *IEEE Transactions on Systems, Man, and Cybernetics--Part C: Applications and Reviews*, 2012. 10.1109/TSMCC.2011.2178120, NIHMSID #369665
33. Y. Tian, A. Senior, and M. Lu, "Robust and Efficient Foreground Analysis in Complex Surveillance Videos", *Machine Vision and Applications*, Volume 23, Issue 5, Page 967-983, 2012.
34. Y. Tian, L. Cao, Z. Liu, and Z. Zhang, Hierarchical Filtered Motion for Action Recognition in Crowded Videos, *IEEE Transactions on Systems, Man, and Cybernetics--Part C: Applications and Reviews*, Vol. 42, Issue. 3, 2011. 10.1109/TSMCC.2011.2149519
35. S. Yuan, Y. Tian, and A. Arditì, "Clothing Matching for Visually Impaired Persons", *Technology and Disability* 23, Page1-11, 2011. The online version if the article is available at: <http://dx.doi.org/10.3233/TAD-2011-0313> NIHMSID #369668
36. C. Yi and Y. Tian, "Text String Detection from Natural Scenes by Structure-based Partition and Grouping", *IEEE Transactions on Image Processing*, Vol. 20, Issue 9, 2011. PMID: 21411405. NIHMSID #369669
37. Y. Tian, R. Feris, H. Liu, A. Hampapur, and M. Sun, "Robust Detection of Abandoned and Removed Objects in Complex Surveillance Videos", *IEEE Transactions on Systems, Man, and Cybernetics--Part C: Applications and Reviews*, Vol. 41, Issue 5, 2011.
38. Y. Tian, A.W. Senior, A. Hampapur, L. Brown, C. Shu, and M. Lu, "IBM Smart Surveillance System (S3): Event Based Video Surveillance System with an Open and Extensible Framework", *Machine Vision and Applications*, 19:315-327, 2008.
39. A. Senior, A. Hampapur, Y. Tian, L. Brown, S. Pankanti, and R. Bolle, "Appearance Models for Occlusion Handling", *Journal of Image and Vision Computing* Volume 24 Issue 11, pp 1233-1243, November 2006.
40. A. Senior, S. Pankanti, A. Hampapur, L. Brown, Y. Tian, A. Ekin, J. Connell, C. Shu, and M. Lu, "Enabling Video Privacy through Computer Vision," *IEEE Security & Privacy – Infrastructure Security*, vol. 3, No. 3, May/June 2005.
41. A. Hampapur, L. Brown, J. Connell, Max Lu, Hans Merkl, S. Pankanti, A.W. Senior, C. Shu, and Y. Tian, "Multi-scale Tracking for Smart Video Surveillance," *IEEE Transactions on Signal Processing*, vol. 22, No. 2, March 2005.
42. Y. Tian, "Automatic Facial Expression Analysis", *Robotics and Machine Perception*, SPIE International Technical Group Newsletter, 2004.
43. K. Schmidt, J. F. Cohn and Y. Tian, Signal characteristics of spontaneous facial expressions: Automatic movement in solitary and social smiles. *Biological Psychology*, 65, 49-66, 2003. PMID: 14638288

44. S. Pankanti, A. Senior, L. Brown, A. Hampapur, Y. Tian, and R. Bolle, "PeopleVision: Privacy Protection in Visual Surveillance", IEEE Pervasive Computing Work in Progress, Volume 2 No. 1, January-March 2003. p. 96
45. Y. Tian, T. Kanade and J. F. Cohn, " Recognizing Action Units for Facial Expression Analysis ", IEEE Transactions on Pattern Analysis and Machine Intelligence, Vol. 23, No. 2, February, 2001
46. K.L. Schmidt, V. Monaco, B. Peters, J. VanSwearingen, Yingli Tian, and J. F. Cohn, "Relation between automatic tracking of lip-corner motion and facial surface EMG of the zygomaticus major muscle during spontaneous smiles. Society for Psychophysiological Research, San Diego, October, 2000.
47. Y. Tian, H. Tsui, S.Y. Yeung and S. Ma, "Shape from Shading for Multiple Light Sources", Journal of Optical Society of America A, pp36-52, Vol. 16, No. 1, Jan. 1999.
48. Y. Tian and S. Ma "Shape Recovery by Neural Network in Unknown Light Environment", ACTA AUTOMATICA SINICA, Vol. 25, No. 2, March, 1999.
49. Y. Tian and S. Ma "3D Shape Recovery by Genetic Algorithm", Journal of Image and Graphics (in Chinese), Vol. 4(A), 1999.
50. Y. Tian and S. Ma "Extended Spherical light based Shape from Shading", ACTA OPTICAL SINICA, Vol. 18, No. 10, Oct., 1998.
51. Y. Xu, C. Xu, Y. Tian and S. Ma, "3D Face Image Acquisition and Reconstruction System", Journal of Image and Graphics (in Chinese), Vol.3, No.2, 1998.
52. Y. Tian and H. Tsui, "Shape Recovery from a Color Image for Non-Lambertian Surface", Journal of Optical Society of America A, Vol. 14, No. 2, pp397--404, Feb. 1997.

Book Chapters:

53. C. Yi and Y. Tian, Assistive Text Reading from Natural Scene for Blind Persons, Chapter in book Mobile Cloud Visual Media Computing: From Interaction to Service, by Springer, G. Hua and X. Hua (Eds), 2015.
54. Y. Tian, RGB-D Sensor-Based Computer Vision Assistive Technology for Visually Impaired Persons, Chapter in book Computer Vision and Machine Learning with RGB-D Sensors, by Springer, L. Shao, J. Han, P. Kohli, Z. Zhang (Eds), 2014.
55. Y. Tian, L. Cao, Z. Liu, and Z. Zhang, Action Detection by Fusing Hierarchically Filtered Motion With Spatiotemporal Interest Point Features, In book Human Behavior Recognition Technologies: Intelligent Applications for Monitoring and Security, by IGI Global, Hans Guesgen and Stephen Marsland (Eds.), ISBN 978-1-4666-3682-8 (hardcover) -- ISBN 978-1-4666-3683-5 (ebook), 2013.
56. R. Feris, A. Hampapur, Y. Zhai, R. Bobbitt, L. Brown, D. Vaquero, Y-L. Tian. H. Liu and M-T. Sun, "*Case Study: IBM Smart Surveillance System*", in book of Intelligent Video Surveillance: Systems and Technology, Editor(s): Y. Ma and G. Qian, Publisher: CRC Press, 2009 (ISBN: 9781439813287).
57. Y. Tian, R. Feris, L. Brown, D. Vaquero, Y. Zhai and A. Hampapur, "*Multi-Scale Person Detection and Motion Analysis for Video Surveillance*", in book of Machine Learning for Human Motion Analysis: Theory and Practice, Editors: Liang Wang, Li Cheng, Guoying Zhao, Publisher: Medical Information Science Reference, 2009 (ISBN: 1605669008).

58. Y. Zhai, Y-L. Tian, R. Feris, L. Brown, R. Bobbitt, A. Hampapur, and S. Velipasalar, "Composite Event Detection in Multi-Camera and Multi-Sensor Surveillance Networks", in book of Multi-Camera Networks: Principles and Applications, Editors: H. Aghajan and A. Cavallaro, by Elsevier. 2009 (ISBN: 0123746337).
59. Y. Tian, A. Hampapur, L. Brown, R. Feris, M. Lu, A. Senior, C. Shu, and Y. Zhai, "Event detection, query, and retrieval for video surveillance", In book Artificial Intelligence for Maximizing Content Based Image Retrieval, Edited by Zongmin Ma, Published by Idea Group Inc., 2008.
60. G. Pingali, Ying-Li Tian, S. Ebadollahi, J. Pelecanos, M. Podlaseck, and H. Stavropoulos, "An End-to-end eChronicling System for Mobile Human Surveillance", In book Multimodal Surveillance: Sensors, Algorithms and Systems, Edited by ZhiGang Zhu and Thomas Huang, Artech House Publishers, 2007.
61. K. Schmidt, J. F. Cohn and Y. Tian, "Signal characteristics of spontaneous facial expressions: Automatic movement in solitary and social smiles" In book What the Face Reveals: Basic and Applied Studies of Spontaneous Expression Using The Facial Action Coding Systems (FACS), Second Edition, Edited by Paul Ekman and Erika L. Rosenberg, Elsevier Science Publishers, Oxford University Press, 2005.
62. A. Senior, A. Hampapur, L. Brown, Y. Tian, C. Shu and S. Pankanti, "Distributed Active Multi-camera Networks", Ambient Intelligence ed. P. Remagnino. G.L. Foresti and T. Ellis. Kluwer Publishing 2004.
63. Y. Tian, T. Kanade and J. F. Cohn, "Facial Expression Analysis" In book Handbook of Face Recognition, Edited by Stan Li and A.K. Jain, Springer-Verlag January, 2004.
64. Y. Tian, T. Kanade and J. F. Cohn, "Recognizing action units for facial expression analysis" In book Multi-modal interface for human machine communication, Machine perception and artificial intelligence series. 2002.

Peer-reviewed Conference Papers:

65. Y. Xian, Y. Wang, Y. Tian, Y. Xu, and J. Bankoski, Multi-Level Machine Learning-based Early Termination in VP9 Partition Search, Visual Information Processing and Communication Conference, IS&T International Symposium on Electronic Imaging (EI), 2018.
66. L. Jing, Y. Ye, X. Yang, and Y. Tian, 3D Convolutional Neural Network with Multi-Model Framework for Action Recognition, IEEE International Conference on Image Processing (ICIP), 2017.
67. J. Liu and Y. Tian, Recognizing Elevator Buttons and Labels for Blind Navigation, IEEE Int. Conf. on CYBER Technology in Automation, Control, and Intelligent Systems (IEEE-CYBER), 2017.
68. J. P. Muñoz, B. Li, X. Rong, J. Xiao, Y. Tian, and A. Arditì, An Assistive Indoor Navigation System for the Visually Impaired in Multi-Floor Environments, IEEE Int. Conf. on CYBER Technology in Automation, Control, and Intelligent Systems (IEEE-CYBER), 2017 (Best Paper Award.)
69. R. Acharya, C. Zhang, and Y. Tian, Learning Alphabets and Numbers from Hand Motion Trajectories for Visually Impaired Children, IEEE Int. Conf. on CYBER Technology in Automation, Control, and Intelligent Systems (IEEE-CYBER), 2017.

70. W. Fernandez^{1*}, Y. Xian^{*}, and Y. Tian (* indicates equal contribution), Image-Based Barcode Detection and Recognition to Assist Visually Impaired Persons, IEEE Int. Conf. on CYBER Technology in Automation, Control, and Intelligent Systems (IEEE-CYBER), 2017.
71. Z. Petrou and Y. Tian, Prediction of Sea Ice Motion with Recurrent Neural Networks, IEEE International Geoscience and Remote Sensing Symposium (IGARSS), 2017.
72. Z. Petrou, Y. Xian, and Y. Tian, Increasing Spatial Resolution of Sea Ice Motion Estimation, IEEE International Geoscience and Remote Sensing Symposium (IGARSS), 2017.
73. X. Rong, C. Yi and Y. Tian, Unambiguous Text Localization and Retrieval for Cluttered Scenes, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017.
74. X. Rong, B. Li, J. P. Muñoz, J. Xiao, A. Arditì and Y. Tian, Guided Text Spotting for Assistive Blind Navigation in Unfamiliar Indoor Environments, 12th International Symposium on Visual Computing (ISVC), 2016.
75. C. Zhang and Y. Tian, Automatic Video Description Generation via LSTM with Joint Two-stream Encoding, the 23rd International Conference on Pattern Recognition (ICPR), 2016.
76. C. Zhang and Y. Tian, Automatic Video Captioning via Multi-channel Sequential Encoding, Fourth International Workshop on Assistive Computer Vision and Robotics (ACVR) in conjunction with ECCV 2016.
77. B. Li, J. P. Muñoz, X. Rong, J. Xiao, Y. Tian, and A. Arditì, ISANA: Wearable Context-Aware Indoor Assistive Navigation with Obstacle Avoidance for the Blind, Fourth International Workshop on Assistive Computer Vision and Robotics (ACVR) in conjunction with ECCV 2016.
78. X. Rong, C. Yi, and Y. Tian, Recognizing Text-based Traffic Guide Panels with Cascaded Localization Network, ECCV2016 workshop on Computer Vision for Road Scene Understanding and Autonomous Driving (CVRSUAD) in conjunction with ECCV 2016.
79. X. Rong and Y. Tian, Adaptive Shrinkage Cascades for Blind Image Deconvolution, IEEE International Conference on Digital Signal Processing (DSP), 2016.
80. C. Zhang, Y. Tian, and M. Huenerfauth, Multi-Modality American Sign Language Recognition, IEEE International Conference on Image Processing (ICIP), 2016.
81. J. P. Muñoz, B. Li, X. Rong, J. Xiao, Y. Tian, and A. Arditì, Demo: Assisting Visually Impaired People Navigate Indoors, the 25th International Joint Conference on Artificial Intelligence (IJCAI), 2016.
82. L. Du, H. Lang, Y. Tian, C. Tan, J. Wu, and H. Ling, Covert Video Classification by Codebook Growing Pattern, IEEE International Workshop on Moving Cameras Meet Video Surveillance: from Body Cameras to Drones (MCMVS) in conjunction with CVPR 2016.
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84. Y. Ye and Y. Tian, Embedding Sequential Information into Spatiotemporal Features for Action Recognition, IEEE CVPR2016 workshop RoF: Robust Features for Computer Vision 2016.

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ISSUED PATENTS (29):

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2. Real Time Processing of Video Frames, **Patent US9129402 B2** Issued on Sept. 8, 2015
3. Real Time Processing of Video Frames for Triggering an Alert, Patent US 8934670 B2 Issued on January 13, 2015.
4. Rule-Based Combination of a Hierarchy of Classifiers for Occlusion Detection, **Patent US8837776 B2**, Issued on September 16, 2014.
5. Application Independent System, Method, and Architecture for Privacy Protection, Enhancement, Control, and Accountability in Imaging Service Systems, **Patent US8752197 B2**, Issued on June 10, 2014.
6. Abandoned Object Recognition Using Pedestrian Detection, **Patent US8675917 B2**, Issued on Mar. 18, 2014
7. Object Detection System Based on A Pool of Adaptive Features, **Patent US8655018 B2**, Issued on Feb. 18, 2014
8. Hierarchical Filtered Motion Field for Action Recognition, **Patent US 8639042 B2**, Issued on Jan. 28, 2014.
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12. Rule-Based Combination of A Hierarchy of Classifiers for Occlusion Detection, **Patent US8331674**, Issued on December 11, 2012.
13. System and Method for Model Based People Counting, **Patent US8295545** Issued on October 23, 2012.
14. Automatic Multiscale Image Acquisition from a Steerable Camera, **Patent US8289392**, Issued on October 16, 2012.
15. Real Time Processing of Video Frames for Triggering an Alert, **Patent US8284249 B2**, Issued on October 9, 2012
16. Object Tracking Using Color Histogram and Object Size, **Patent US8243987 B2**, Issued on August 14, 2012
17. Object Detection System Based on a Pool of Adaptive Features, **Patent US8170276 B2**, Issued on May 1, 2012
18. Detection of Abandoned and Removed Objects in a Video Stream, **Patent US8107678 B2**, Issued on April 24, 2012
19. Detecting Objects Crossing a Virtual Boundary Line, **Patent US8165348 B2** Issued on Jan. 31, 2012
20. Automated Learning for People Counting Systems, **Patent US7991193** Issued on August 2, 2011
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22. Salient Motion Detection System, Method and Program Product Therefor, **Patent US7747075**, Issued on June 29, 2010
23. Robust and Efficient Foreground Analysis for Real-Time Video Surveillance, **Patent US7620266**, Issued on Nov. 17, 2009
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29. System and Method for Automatically Detecting Neutral Expressionless Faces in Digital Images, **Patent US6879709**, Issued on April 12, 2005.

TEACHING/EDUCATION:

1. Supervised 10 Ph.D. students, 5 Postdocs, 13 Masters students, 20 Undergraduate students.

2. Teach EE2100 (Switching Systems -- – Undergraduate Course), EE dept., City College of the City University of New York.
3. Teach EE4710 (Introduction to Digital Image Processing – Undergraduate Course), EE dept., City College of the City University of New York.
4. Teach I2200 (Advanced Digital Image Processing – Graduate Course), EE dept., City College of the City University of New York.
4. Teach Engr103 (Computer-Aided Analysis Tools For Engineers), EE dept., City College of the City University of New York.
5. Co-teaching a class E6998-007 on Automatic Video Surveillance, Adjunct professor at CS department, Columbia University
6. Taught “Functions and Applications of IBM Smart Surveillance Solutions” training class for worldwide IBM services. Supervised Postdoctoral fellows and interns, IBM T. J. Watson Research Center, Yorktown Heights, NY
7. Supervised and worked closely with PhD and Master degree students, Carnegie Mellon University, Pittsburgh, PA
8. Taught “Computer Vision and Image processing” at the Graduate School, Chinese Academy of Sciences, Beijing, China.
9. Taught “Signal Processing” for undergraduate students; Supervised master degree students and undergraduate final year projects. Dept. of Electronic Engineering, The Chinese University of Hong Kong, Hong Kong.
10. Supervised master degree students, National Laboratory of Pattern Recognition, Chinese Academy of Sciences, Beijing, China.

DOCTORAL STUDENTS AND POSTDOCS: (as advisor and sponsor)

Ph.D. Students graduated (5):

- **Yang Xian**, PhD in Computer Science, The Graduate Center, The City University of New York, August 2017. Dissertation: *Exploring the Internal Statistics: Single Image Super-Resolution, Completion and Captioning*. Now an engineer and researcher at Google, NY.
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Ph.D. Students Current (5):

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