

Junsong Yuan

CONTACT INFORMATION

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CURRENT

State University of New York at Buffalo, Buffalo, NY, USA

Associate Professor (tenured), CSE Department, March 2018 - present
Director of Visual Computing Lab, CSE Department, March 2018 - present

PREVIOUS

Nanyang Technological University, Singapore

Associate Professor (tenured), School of EEE, Sept. 2015 - March 2018
Nanyang Assistant Professor, School of EEE, Sept., 2009 - Aug. 2015

EDUCATION

Northwestern University, Evanston, Illinois, USA

Doctor of Philosophy in Electrical and Computer Engineering, August, 2009
Thesis: Mining Image and Video Data (*Outstanding EECS PhD Thesis Award*)

National University of Singapore, Singapore

Master of Engineering in Electrical and Computer Engineering, January, 2005
Thesis: Robust Short Clip Representation and Fast Search through Large Video Collections

Huazhong University of Science and Technology, Wuhan, P.R.China

Special Program for the Gifted Young
Bachelor of Engineering, Communication Engineering, July, 2002

RESEARCH INTERESTS

Computer Vision and Pattern Recognition
Video Analytics
Human Action and Gesture Analysis
Large-Scale Visual Search and Mining
Biomedical Image Analysis and Applications

INDUSTRY RESEARCH EXPERIENCE

Microsoft Research, Redmond, Washington, USA

Research Intern

June - September, 2008

Kodak Research Laboratory, Rochester, New York, USA

Research Intern

June - September, 2007

Motorola Laboratory, Schaumburg, Illinois, USA

Research Intern

June - September, 2006

Institute for Infocomm Research, Singapore

Research Scholar

January 2003 - December, 2004

TEACHING
EXPERIENCE

CSE Department, University at Buffalo, USA

Lecture

CSE473/573 Computer vision and Image Processing, 2018 Fall

Seminar

CSE707 Selected Topics in Computer Vision, 2018 Fall

School of EEE, Nanyang Technological University, Singapore

Lecture

EE4476/IM4476 Image Processing, 2011-2015 1st semester

EE4483/IM4483 Artificial Intelligence and Data Mining, 2011-2017 1st semester

Tutorial

EE2010/IM2010 Signals and Systems, 2015-2017 2nd semester

EE4483/IM4483 Artificial Intelligence and Data Mining, 2011-2017 1st semester

EE4476/IM4476 Image Processing, 2012-2015 1st semester

GRANTS IN NTU

PI: A Vision-based Solution for Egocentric Hand Motion Analysis on Wearable Devices, Singapore Ministry of Education (MoE) Tier-2 Grant, July 2016 - June 2019, S\$509,040 ¹

PI: Towards More Social Robots: Understanding Human Behaviours with 2D and 3D Sensors, Microsoft Research Asia, Dec. 2016 - Dec. 2017, S\$ 40,233, unrestricted gift

PI: Towards More Social Robots: Understanding Human Behaviours with 2D and 3D Sensors, Microsoft Azure credits, Dec. 2016 - Dec. 2017, US\$ 5,000

PI: Exploring Visual Relevance to Construct a Holistic Picture of Online News, Singapore Ministry of Education (MoE) Tier-1 Grant, Nov. 2014 - Oct. 2017, S\$149,200

PI: Real-time Automated Analysis of Soccer Videos, Advanced Digital Sciences Center (ADSC), Singapore, Jan. 2016 - Jan. 2019, S\$155,000

PI: Discriminative Action States Discovery for On-line Action Recognition, Defense Science Organization (DSO) National Labs, Aug. 2016 - July 2018, S\$ 199,525

PI: Mining and Identifying Abnormal and Suspicious Activities, Singapore Defence Research and Technology Office (DRTech), Dec. 2015 - Dec. 2018, S\$ 308,000

PI²: Multi-Layered Computational Display, Singapore National Research Foundation (NRF), April 2014 - March 2019, S\$1,003,541

PI: General Object Recognition by Big Data Retrieval, Omron Inc., Japan, July 2015 - June 2016, S\$ 99,000

PI³: Media Analytics, Singapore Media Development Authority (MDA), Dec. 2012 - Nov. 2017, S\$ 1,000,000

¹1 S\$ is equal to 0.70 US\$

²under National Research Foundation Competitive Research Program (NRF-CRP): Towards The Reality of 3D Imaging and Display

³under Rapid-Rich Object Search Center (ROSE Lab)

Joint-PI⁴: Scene Understanding Through Bottom-up and Top-down Processing, Singapore National Research Foundation (NRF), July 2015 - June 2018, S\$ 643,600

Joint-PI⁵: Sensor Fusion Frameworks for Objects Classification, Terrain Classification and Localization, Singapore National Research Foundation (NRF), July 2015 - June 2017, S\$ 489,000

Joint-PI⁶: Autonomous Virtual Humans and Social Robot for Tele-presence, Singapore Media Development Authority (MDA), Feb. 2012 - March 2016, S\$ 1,512,000

PI: Mining Image and Video Data, Nanyang Assistant Professorship, NTU, Sept. 2009 - Aug. 2012, S\$ 1,000,000

PI: Abnormal Video Event Detection for Traffic Safety, NTU-JSPS Joint Research Projects, April 2012 - March 2014, S\$ 76,000

PI: Video object discovery, Adobe Systems, USA, Dec. 2013 - Aug. 2014, US\$ 26,000, unrestricted gift

PI: Hand gesture recognition using depth camera, Microsoft Research Redmond, USA, Dec. 2011 - Dec. 2012, US\$ 15,000, unrestricted gift

PI: Real-time Object Retrieval in Large Scale Video Data, Singapore Infocomm Development Authority (IDA), April - Dec. 2013, S\$430,000

PI: Fusion of Velodyne and Image Detection Modules, Defense Science Organization (DSO) National Labs, Feb 2012 - July 2012, S\$ 37,383

PI: Cognitive Approach for Activity Learning, Defense Science Organization (DSO) National Labs, Dec. 2012 - Nov. 2014, S\$ 160,080

PI: Towards the reality of autonomous vehicles, College of Engineering Seed Grant, NTU, Oct. 2012 - March 2013, S\$ 46,000

PI: Integrating a User within a group or a crowd using Computer Vision and Synthetic Vision, IMI Seed Grant, Institute for Media Innovation, NTU, Dec. 2012 - June 2014, S\$ 89,000

Co-PI: Towards Reality of Integrated 3D Imaging and Display, EEE Seed Grant, NTU, Oct. 2012 - March 2013, S\$ 50,000

Co-PI: NTU-MGH Programme on Clinical Neurotechnologies, EEE Seed Grant, NTU, Oct. 2012 - March 2013, S\$ 48,000

Collaborator: Towards 3D nanoscope with super spatial resolution, Ministry of Education Tier-2 Grant, April 2013- March 2016, S\$723,500

Collaborator: Low Power Frame-less Image Sensor for High Speed Object Tracking, Ministry of Education Tier-1 Grant, Nov. 2014- Oct 2017, S\$215,500

HONORS AND AWARDS

⁴under STEng-NTU Cooperate Lab

⁵under STEng-NTU Cooperate Lab

⁶under Tele-Presence and Tele-Collaboration Research Center (BeingThere Center)

Fellow of International Association of Pattern Recognition (IAPR), 2018
APSIPA Distinguished Lecturer, 2018
International Conference on Advanced Robotics (ICAR) Best Paper Award, 2017
IEEE Trans. on Multimedia Best Paper Award, 2016
Outstanding EECS PhD Thesis Award, Northwestern University, USA, 2010
Nanyang Assistant Professorship, Nanyang Technological University, 2009
Doctoral Spotlight Award, IEEE Conf. Computer Vision and Pattern Recognition, 2009
National Outstanding Student, Ministry of Education, China, 2001 (highest honor for students)
Hu Chunan Fellowship, Ministry of Education, China, 2001 (100 from entire China)
Model of Outstanding Students, Huazhong Univ. of Sci. and Tech., China, 2000 (20 out of 30,000)

BOOKS

1. Hongxing Wang, Chaoqun Weng, and Junsong Yuan, *Visual Pattern Discovery and Recognition*, by Springer, 2017
2. Nadia Magnenat Thalmann, Junsong Yuan, Daniel Thalmann, Bum-Jae You, *Context Aware Human-Robot and Human-Agent Interaction*, by Springer, 2015
3. Gang Yu, Junsong Yuan, and Zicheng Liu, *Human Action Analysis with Randomized Trees*, by Springer, 2015
4. Junsong Yuan, *Discovering visual patterns in image and video data: concepts, algorithms, experiments*, by VDM Verlag Dr. Muller, April 2011

BOOK CHAPTERS

1. Gangqiang Zhao and Junsong Yuan, "Automatic Visual Pattern Discovery via Cohesive Sub-graph Mining," invited book chapter in *Mobile Cloud and Visual Media Computing*, Springer, 2016
2. Yang Cong, Ji Liu, Junsong Yuan, and Jiebo Luo, "Low Rank Online Metric Learning", invited book chapter in *Low-Rank and Sparse Modeling for Visual Analysis*, Springer, 2014
3. Hui Liang and Junsong Yuan, "Hand Parsing and Gesture Recognition with a Commodity Depth Camera", invited book chapter in *Computer Vision and Machine Learning with RGB-D Sensors*, Springer, 2014
4. Zhu Li, Yun Fu, Junsong Yuan, Ying Wu, A. K. Katsaggelos and Thomas S. Huang, "Multi-media Data Indexing", invited book chapter in *Semantic Mining Technologies for Multimedia Databases*, Idea Group Inc., 2010
5. Junsong Yuan and Ying Wu, "Common pattern discovery in multimedia data mining", invited book chapter in *Encyclopedia of Data Warehousing and Mining (2nd Edition)*, Idea Group Inc., 2008

JOURNAL PUBLICATIONS

1. Lihao Ge, Hui Liang, Junsong Yuan, Daniel Thalmann, "Real-time 3D Hand Pose Estimation with 3D Convolutional Neural Networks," in *IEEE Trans. on Pattern Analysis and Machine Intelligence (T-PAMI)*, 2019
2. Hui Liang, Junsong Yuan, Jun Lee, Lihao Ge, and Daniel Thalmann, "Spatially-Optimized Hough Forest for Robust Palm Pose Tracking with Arbitrary Hand Postures", in *IEEE Trans. on Cybernetics (T-CYB)*, 2019
3. Chunlun Zhou and Junsong Yuan, "Multi-label Learning of Part Detectors for Occluded Pedestrian Detection," in *Pattern Recognition (PR)*, 2019
4. Yuwei Wu, Feng Gao, Yicheng Huang, Jie Lin, Vijay Chandrasekhar, Junsong Yuan, Ling-Yu Duan, "Codebook-Free Compact Descriptor for Scalable Visual Search," in *IEEE Trans. Multimedia (T-MM)* 21(2), 388-401, 2019

5. Feng Zhao, Zhiguo Cao, Yang Xiao, Jing Mao, Junsong Yuan, "Real-time Detection of Fall from Bed using a Single Depth Camera," in *IEEE Transactions on Automation Science and Engineering* (T-ASE), 2019
6. Zhigang Tu, Wei Xie, Dejun Zhang, Ronald Poppe, Remco C. Veltkamp, Baoxin Li, Junsong Yuan, "A survey of variational and CNN-based optical flow techniques," in *Signal Processing: Image Communication*, 2019
7. Jing Tang, Xueyan Tang, and Junsong Yuan, "An Efficient and Effective Hop-Based Approach for Influence Maximization in Online Social Networks," in *Social Network Analysis and Mining* (SNAM), 8(1): 10, 2018
8. Ling-Yu Duan, Yuwei Wu, Lingbo Yang, Yicheng Huang, Zhe Wang, Junsong Yuan, and Wen Gao, "Minimizing Reconstruction Bias Hashing via Joint Projection Learning and Quantization," in *IEEE Trans. on Image Processing* (T-IP), 27(6): 3127-3141, 2018
9. Jingjing Meng, Suchen Wang, Hongxing Wang, Junsong Yuan, and Yap-Peng Tan, "Video Summarization via Multi-View Representative Selection," in *IEEE Trans. on Image Processing* (T-IP), 27(5): 2134-2145, 2018
10. Weixiang Hong and Junsong Yuan, "Fried Binary Embedding: from High-Dimensional Visual Features to High-Dimensional Binary Codes," in *IEEE Trans. on Image Processing* (T-IP), 27(10): 4825-4837, 2018
11. Zhenzhen Wang and Junsong Yuan, "Simultaneously Discovering and Localizing Common Objects in Wild Images," in *IEEE Trans. on Image Processing* (T-IP), 27(9): 4503-4515, 2018
12. Jiong Yang and Junsong Yuan, "Temporally Enhanced Image Object Proposals for Online Object and Action Detection," in *Journal of Visual Communication and Image Representation* (JVCI), 53: 245-256, 2018
13. Hongxing Wang and Junsong Yuan, "Representative Selection on a Hypersphere," in *IEEE Signal Processing Letter* (SPL), 2018
14. Junlin Hu, Jiwen Lu, Yap-Peng Tan, Junsong Yuan, and Jie Zhou, "Local Multi-Metric Learning for Face and Kinship Verification," in *IEEE Trans. on Circuits and Systems for Video Technology* (T-CSVT), 28(8): 1875-1891, 2018
15. Zhigang Tu, Wei Xie, Qianqing Qin, Ronald Poppe, RC Veltkamp, Baoxin Li, and Junsong Yuan, "Multi-Stream CNN: Applying Human-Related Region Based Descriptors for Action Recognition," in *Pattern Recognition* (PR), 79: 32-43, 2018
16. Jing Tang, Xueyan Tang, and Junsong Yuan, "Profit Maximization for Viral Marketing in Online Social Networks: Algorithms and Analysis," in *IEEE Trans. on Knowledge and Data Engineering* (T-KDE), 30(6): 1095-1108, 2018
17. Das Bhattacharjee Sreyasee, Junsong Yuan, Yicheng Huang, Jingjing Meng, and Lingyu Duan, "Sketch based object search via Query Adaptive Re-ranking," in *IEEE Trans. on Multimedia* (T-MM), 20(10): 2761-2773, 2018
18. Koteswar Rao Jerripothula, Jianfei Cai and Junsong Yuan, "Quality-guided Fusion-based Co-saliency Estimation for Image Co-segmentation and Co-localization", in *IEEE Trans. on Multimedia* (T-MM), 20(9): 2466-2477, 2018
19. Lihao Ge, Hui Liang, Junsong Yuan, Daniel Thalmann, "Robust 3D Hand Pose Estimation from Single Depth Images using Multi-View CNNs," in *IEEE Trans. on Image Processing* (T-IP), 27(9): 4422-4436, 2018
20. Jing Tang, Xueyan Tang, and Junsong Yuan, "Traffic-Optimized Data Placement for Social Media," *IEEE Trans. on Multimedia* (T-MM), Vol. 20, No. 4, pp. 1008-1023, 2018
21. Philip Anthony Surman, Shizheng Wang, Junsong Yuan, and Yuanjin Zheng, "One-stop Measurement Model for Fast and Accurate Tensor Display Characterization," *Journal of the Optical Society of America*, 2018

22. Hongxing Wang, Yoshinobo Kawahara, Chaoqun Weng, and Junsong Yuan, "Representative Selection with Structured Sparsity," in *Pattern Recognition (PR)*, Vol. 63, pp. 268-278, 2017
23. Zhigang Tu, Wei Xie, Mengjia Yan, Remco C. Veltkamp, Baoxin Li, and Junsong Yuan, "Fusing Disparate Object Signatures for Salient Object Detection in Videos," in *Pattern Recognition (PR)*, Vol. 72, pp. 285-299, 2017
24. Anirban Chakraborty, Bappaditya Mandal, and Junsong Yuan, "Person Re-identification Using Multiple Egocentric Views," in *IEEE Trans. on Circuits and Systems for Video Technology (T-CSVT)*, Vol. 27, No. 3, pp. 484-498, 2017
25. Jianfeng Ren, Xudong Jiang, Junsong Yuan, and Nadia Thalmann, "Sound-Event Classification Using Robust Texture Features for Robot Hearing," in *IEEE Trans. on Multimedia (T-MM)*, Vol. 19, No. 3, pp. 447-458, 2017
26. Jianfeng Ren, Xudong Jiang, and Junsong Yuan, "LBP-Structure Optimization with Symmetry and Sparsity Regularizations for Scene Classification," in *IEEE Signal Processing Letter (SPL)*, Vol. 24, No. 1, pp. 37-41, 2017
27. Chaoqun Weng, Hongxing Wang, Junsong Yuan, and Xudong Jiang, "Discovering Class-Specific Spatial Layouts for Scene Recognition," in *IEEE Signal Processing Letter (SPL)*, Vol. 24, No. 8, pp. 1143-1147, 2017
28. Kang Dang and Junsong Yuan, "Learning Location Constrained Pixel Classifiers for Image Parsing with Regular Spatial Layout", in *Journal of Visual Communication and Image Representation (JVCI)*, 2017
29. Shizheng Wang, Ong Kien Seng, Philip Anthony Surman, Junsong Yuan, Yuanjin Zheng, and Xiaowei Sun, "Quality of Experience Measurement for Light Field 3D Displays on Multilayer LCDs," *Journal of the Society for Information Display (JSID)*, 2017
30. Zhiwen Fang, Zhiguo Cao, Yang Xiao, Lei Zhu, and Junsong Yuan, "Adobe Boxes: Locating Object Proposals using Object Adobes," in *IEEE Trans. on Image Processing (T-IP)*, Vol. 25, No. 9, pp. 4116-4128, 2016
31. Jiong Yang, Brian Price, Xiaohui Shen, Zhe Lin, Junsong Yuan, "Fast appearance modeling for automatic primary video object segmentation," in *IEEE Trans. on Image Processing (T-IP)*, Vol. 25, No. 2, pp. 503-515, 2016
32. Jianyu Yang, Hongxing Wang, Junsong Yuan, Youfu Li, Jianyang Liu, "Invariant Multi-Scale Descriptor for Shape Representation, Matching and Retrieval", in *Computer Vision and Image Understanding (CVIU)*, Vol. 145, pp. 43-58, 2016
33. Jiong Yang, Gangqiang Zhao, Junsong Yuan, Xiaohui Shen, Zhe Lin, Brian Price, Jonathan Brandt, "Discovering Primary Objects in Videos by Saliency Fusion and Iterative Appearance Estimation," in *IEEE Trans. on Circuits and Systems for Video Technology (T-CSVT)*, Vol. 26, No. 6, pp. 1070-1083, 2016
34. Koteswar Rao Jerripathula, Jianfei Cai and Junsong Yuan, "Image Co-segmentation via Saliency Co-fusion", in *IEEE Trans. on Multimedia (T-MM)*, Vol. 18, No. 9, pp. 1896-1909, 2016
35. Das Sreyasee, Junsong Yuan, Yap-Peng Tan, Ling-Yu Duan, "Query-adaptive Small Object Search using Object Proposals and Shape-aware Descriptors," in *IEEE Trans. on Multimedia (T-MM)*, Vol. 18, No. 4, pp. 726-737, 2016
36. Jingjing Meng, Junsong Yuan, Jiong Yang, Yap-Peng Tan, Gang Wang, "Object Instance Search in Videos via Spatio-Temporal Path Discovery", in *IEEE Trans. on Multimedia (T-MM)*, Vol. 18, No. 1, pp. 116-127, 2016
37. Jianyu Yang, Junsong Yuan, Youfu Li, "Parsing 3D motion trajectory for gesture recognition," *Journal of Visual Communication and Image Representation (JVCI)*, Vol. 38, pp. 627-640, 2016

38. Ye Luo, Junsong Yuan, and Jianwei Lu, "Finding Spatio-temporal Salient Paths for Video Objects Discovery," *Journal of Visual Communication and Image Representation (JVCI)*, Vol. 38, pp. 45-54, 2016
39. Bo Hu, Junsong Yuan, and Yuwei Wu, "Discriminative Action States Discovery for On-line Action Recognition," in *IEEE Signal Processing Letter (SPL)*, Vol. 23, No. 10, pp. 1374-1378, 2016
40. Gangqiang Zhao, Junsong Yuan, Gang Hua, and Jiong Yang, "Topical Video Object Discovery from Key Frames by Modeling Word Co-occurrence Prior", *IEEE Trans. on Image Processing (T-IP)*, Vol. 24, No. 12, pp. 5739-5752, 2015
41. Yuwei Wu, Yunde Jia, Peihua Li, Jian Zhang, and Junsong Yuan, "Manifold Kernel Sparse Representation of Symmetric Positive Definite Matrices and Its Applications," in *IEEE Trans. on Image Processing (T-IP)*, Vol. 24, No. 11, pp. 3729-3741, 2015
42. Yuning Jiang, Jingjing Meng, Junsong Yuan, and Jiebo Luo, "Randomized Spatial Context for Object Search," in *IEEE Trans. on Image Processing (T-IP)*, Vol. 24, No. 6, pp. 1748-1762, 2015
43. Jianfeng Ren, Xudong Jiang, and Junsong Yuan, "A Chi-Squared-Transformed Subspace of LBP Histogram for Visual Recognition," in *IEEE Trans. on Image Processing (T-IP)*, Vol. 24, No. 6, pp. 1893-1904, 2015
44. Yuwei Wu, Mingtao Pei, Min Yang, Junsong Yuan, and Yunde Jia, "Robust Discriminative Tracking via Landmark-based Label Propagation", in *IEEE Trans. on Image Processing (T-IP)*, Vol. 24, No. 5, pp. 1510-1523, 2015
45. Hongxing Wang and Junsong Yuan, "Collaborative Multi-feature Fusion for Transductive Spectral Learning" in *IEEE Trans. on Cybernetics*, Vol. 45, No. 3, pp 465-475, 2015
46. Jianfeng Ren, Xudong Jiang, and Junsong Yuan, "Learning LBP Structure by Maximizing the Conditional Mutual Information," in *Pattern Recognition (PR)*, Vol. 48, No. 10, pp. 3180-3190, 2015
47. Hui Liang, Junsong Yuan, and Daniel Thalmann, "Resolving Ambiguous Hand Pose Predictions by Exploiting Part Correlations," in *IEEE Trans. on Circuits and Systems for Video Technology (T-CSVT)*, Vol. 25, No. 7, pp. 1125-1139, 2015
48. Gang Yu, Junsong Yuan, and Zicheng Liu, "Propagative Hough Voting for Human Activity Detection and Recognition", in *IEEE Trans. on Circuits and Systems for Video Technology (T-CSVT)*, Vol. 25, No. 1, pp. 87-98, 2015
49. Chaoqun Weng and Junsong Yuan, "Efficient Mining of Optimal AND/OR Patterns for Visual Recognition", in *IEEE Trans. on Multimedia (T-MM)*, Vol. 17, No. 5, pp. 626-635, 2015
50. Jianfeng Ren, Xudong Jiang, and Junsong Yuan, "LBP Encoding Schemes Jointly Utilizing the Information of Current Bit and Other LBP Bits," in *IEEE Signal Processing Letter (SPL)*, Vol. 22, No. 12, pp. 2373-2377, 2015
51. Jianfeng Ren, Xudong Jiang, Junsong Yuan, Gang Wang, "Optimizing LBP Structure For Visual Recognition Using Binary Quadratic Programming," in *IEEE Signal Processing Letter (SPL)*, Vol. 21, No. 11, pp. 1346-1350, 2014
52. Zerrin Yumak, Jianfeng Ren, Nadia Magnenat Thalmann, Junsong Yuan, "Modelling Multi-Party Interactions among Virtual Characters, Robots, and Humans", in *Presence: Teleoperators and Virtual Environments (Presence)*, Vol. 23, No. 2, pp. 172-190, 2014
53. Yang Xiao, Zhijun Zhang, Aryel Beck, Junsong Yuan, and Daniel Thalmann, "Human-Robot Interaction by Understanding Upper Body Gestures", in *Presence: Teleoperators and Virtual Environments (Presence)*, Vol. 23, No. 2, pp. 133-154, 2014
54. Jiang Wang, Zicheng Liu, Ying Wu, and Junsong Yuan, "Learning Actionlet Ensemble for 3D Human Action Recognition", in *IEEE Trans. on Pattern Analysis and Machine Intelligence (T-PAMI)*, Vol. 36, No. 5, pp. 914-927, 2014

55. Tran Du, Junsong Yuan, and David Forsyth, "Video event detection: from video subvolume localization to spatio-temporal path search", in *IEEE Trans. on Pattern Analysis and Machine Intelligence* (T-PAMI), Vol. 36, No. 2, pp. 404-416, 2014
56. Hongxing Wang, Junsong Yuan, and Ying Wu, "Context-Aware Discovery of Visual Co-occurrence Patterns", in *IEEE Trans. on Image Processing* (T-IP), Vol. 23, No. 4, pp.1805-1819, 2014
57. Yang Xiao, Jianxin Wu, and Junsong Yuan, "mCENTRIST: A Multi-channel Feature Generation Mechanism for Scene Categorization", in *IEEE Trans. on Image Processing* (T-IP), Vol. 23, No.2, pp.823-836, 2014
58. Hui Liang, Junsong Yuan, and Daniel Thalmann, "Parsing the Hand in Depth Images," in *IEEE Trans. on Multimedia* (T-MM), Vol. 16, No. 5, pp. 1241-1253, 2014
59. Gangqiang Zhao, Xuhong Xiao, Junsong Yuan and Gee Wah Ng, "Fusion of 3D-LIDAR and Camera Data for Scene Parsing", in *Journal of Visual Communication and Image Representation* (JVCI), Vol. 25, No. 1, pp. 165-183, 2014
60. Yang Xiao, Zhiguo Cao, and Junsong Yuan, "Entropic image thresholding based on GLGM histogram", in *Pattern Recognition Letter* (PRL), Vol. 40, pp. 47-55, 2014
61. Hongxing Wang, Gangqiang Zhao, and Junsong Yuan, "Visual Pattern Discovery in Image and Video Data: A Brief Survey", in *WIRES Data Mining and Knowledge Discovery* (WIREs-DMKD), Vol. 4, No. 1, pp. 24-37, 2014
62. Zhou Ren, Junsong Yuan, and Wenyu Liu, "Minimum Near-Convex Shape Decomposition", in *IEEE Trans. on Pattern Analysis and Machine Intelligence* (T-PAMI), Vol. 35, No. 10, pp 2546-2552, 2013
63. Gang Yu, Junsong Yuan, and Zicheng Liu, "Action Search by Example using Randomized Visual Vocabularies", in *IEEE Trans. on Image Processing* (T-IP), Vol. 22, No. 1, pp. 377-390, 2013
64. Yang Cong, Ji Liu, Junsong Yuan, and Jiebo Luo, "Self-supervised Online Metric Learning with Low Rank Constraint for Scene Categorization", in *IEEE Trans. on Image Processing* (T-IP), Vol. 22, No. 8, pp. 3179-3191, 2013
65. Jianfeng Ren, Xudong Jiang, and Junsong Yuan, "Noise-Resistant Local Binary Pattern with an Embedded Error-Correction Mechanism", in *IEEE Trans. on Image Processing* (T-IP), Vol. 22, No. 10, pp. 4049-4060, 2013
66. Yang Cong, Junsong Yuan, and Ji Liu, "Abnormal Event Detection in Crowded Scenes using Sparse Representation", in *Pattern Recognition* (PR), Vol. 46, No. 7, pp. 1851-1864, 2013
67. Jianfeng Ren, Xudong Jiang, and Junsong Yuan, "A Complete and Fully Automated Face Verification System on Mobile Devices", in *Pattern Recognition* (PR), Vol. 46, No. 1, pp. 45-56, 2013
68. Yang Cong, Junsong Yuan, and Yandong Tang, "Video Anomaly Search in Crowded Scenes via Spatio-Temporal Motion Context", in *IEEE Transactions on Information Forensics and Security* (T-IFS), Vol. 8, No. 10, pp 1590-1599, 2013
69. Zhou Ren, Junsong Yuan, Jingjing Meng and Zhengyou Zhang, "Robust Part-based Hand Gesture Recognition using Kinect Sensor", in *IEEE Trans. on Multimedia* (T-MM), Vol. 15, No. 5, pp. 1110-1120, 2013 (**T-MM Best Paper Award 2016**)
70. Hui Liang, Junsong Yuan, Daniel Thalmann, Zhengyou Zhang, "Model-based Hand Pose Estimation via Spatial-temporal Hand Parsing and 3D Fingertip Localization", in *The Visual Computer* (TVC), Vol. 29, No. 6-8, pp. 837-848, 2013
71. Zhenzhong Chen, Junsong Yuan, and Yap-Peng Tan, "Hybrid Saliency Detection for Images", in *IEEE Signal Processing Letter* (SPL), Vol. 20, No. 1, pp. 95-98, 2013

72. Yang Cong, Junsong Yuan, and Jiebo Luo, "Towards Scalable Summarization of Consumer Videos via Sparse Dictionary Selection", in *IEEE Trans. on Multimedia* (T-MM), Vol. 14, No. 1, pp. 66-75, 2012
73. Rongrong Ji, Ling-Yu Duan, Hongxun Yao, Jie Chen, Junsong Yuan, Yong Rui, and Wen Gao, "Location Discriminative Vocabulary Coding for Mobile Landmark Search", in *International Journal on Computer Vision* (IJCV), Vol. 96, No. 3, pp. 290-314, 2012
74. Junsong Yuan, Gangqiang Zhao, Yun Fu, Zhu Li, Aggelos Katsaggelos, and Ying Wu, "Discovering Thematic Objects in Images Collections and Videos", in *IEEE Trans. on Image Processing* (T-IP), Vol. 21, No. 4, pp. 2207-2219, 2012
75. Junsong Yuan and Ying Wu, "Mining Visual Collocation Patterns via Self-Supervised Subspace Learning", *IEEE Trans. on Systems, Man and Cybernetics Part B: Cybernetics* (T-SMC-B), Vol. 42, No. 2, pp.334-346, 2012
76. Junsong Yuan, Zicheng Liu and Ying Wu, "Discriminative Video Pattern Search for Efficient Action Detection", in *IEEE Trans. on Pattern Analysis and Machine Intelligence* (T-PAMI), Vol. 33, No. 9, pp. 1728-1743, Sept. 2011
77. Gangqiang Zhao, Junsong Yuan, Jiang Xu and Ying Wu, "Discovering the Thematic Object in Commercial Videos", in *IEEE Multimedia Magazine*, Vol. 18, No. 3, pp. 56-65, 2011
78. Ye Luo, Junsong Yuan, Ping Xue and Qi Tian, "Saliency Density Maximization for Efficient Visual Object Discovery", in *IEEE Trans. on Circuits and Systems for Video Technology* (T-CSVT), Vol. 21, No. 12, pp.1822-1834, 2011
79. Gang Yu, Norberto A., Junsong Yuan, Zicheng Liu, "Fast Action Detection via Discriminative Random Forest Voting and Top-K Subvolume Search", in *IEEE Trans. on Multimedia* (T-MM), Vol. 13, No. 3, pp. 507-517, 2011
80. Jiang Xu, Junsong Yuan, and Ying Wu, "Learning Spatio-Temporal Dependency of Local Patches for Complex Motion Segmentation", in *Computer Vision and Image Understanding* (CVIU), Vol. 115, No. 3, pp. 334-351, Mar. 2011
81. Fan Jiang, Junsong Yuan, Sotirios A. Tsafaris and Aggelos K. Katsaggelos, "Anomalous Video Event Detection Using Spatiotemporal Context", in *Computer Vision and Image Understanding* (CVIU), Vol. 115, No. 3, pp. 323-333, Mar. 2011
82. Junsong Yuan and Zicheng Liu, "Video-Based Human Action Detection Resources", in *IEEE Signal Processing Magazine*, pp. 136-139, Sept. 2010.
83. Junsong Yuan, Jiebo Luo and Ying Wu, "Mining Compositional Features from GPS and Visual Cues for Event Recognition in Photo Collections", in *IEEE Trans. on Multimedia* (T-MM), Vol. 12, No. 07, pp.705-716, Nov. 2010.
84. Junsong Yuan, Jingjing Meng, Ying Wu and Jiebo Luo, "Mining Recurring Events through Forest Growing", in *IEEE Trans. on Circuits and Systems for Video Technology* (T-CSVT), Vol. 18, No. 11, pp.1597-1607, Nov. 2008.
85. Yun Fu, Zhu Li, Junsong Yuan, Ying Wu and Thomas S. Huang, "Locality vs. Globality: Query-Driven Localized Linear Models for Facial Image Computing", in *IEEE Trans. on Circuits and Systems for Video Technology* (T-CSVT), Vol.18, No.12, pp.1741-1752, Dec. 2008.
86. Heng Chen, Junsong Yuan and Yuanjie Li, "An Application of Chaos Synchronization in Secure Audio Communication," In *Journal of Physics and Engineering*, Vol. 11, No.1, 2001 (In Chinese).

*Part I: Selected Papers in CVPR/ICCV/ECCV/NIPS/IJCAI/AAAI/KDD/SIGMOD/ACM MM

1. Jun Wen et. al., “Exploiting Local Feature Patterns for Unsupervised Domain Adaptation,” in *Proc. AAAI Conference on Artificial Intelligence (AAAI’19)*, 2019 (*Oral*)
2. Yujun Cai, Lihao Ge, Jianfei Cai, and Junsong Yuan, “Weakly-supervised 3D Hand Pose Estimation from Monocular RGB Images”, in *Proc. European Conf. on Computer Vision (ECCV’18)*, 2018 (*oral*)
3. Lihao Ge, Zhou Ren, and Junsong Yuan, “Point-to-Point Regression PointNet for 3D Hand Pose Estimation”, in *Proc. European Conf. on Computer Vision (ECCV’18)*, 2018
4. Junwu Weng, Mengyuan Liu, Xudong Jiang, and Junsong Yuan, “Deformable Pose Traversal Convolution for 3D Action and Gesture Recognition”, in *Proc. European Conf. on Computer Vision (ECCV’18)*, 2018
5. Tan Yu, Junsong Yuan, Chen Fang, Hailin Jin, “Product Quantization Network for Fast Image Retrieval”, in *Proc. European Conf. on Computer Vision (ECCV’18)*, 2018
6. Chunlun Zhou and Junsong Yuan, “Bi-box Regression for Pedestrian Detection and Occlusion Estimation”, in *Proc. European Conf. on Computer Vision (ECCV’18)*, 2018
7. Tan Yu, Jingjing Meng, and Junsong Yuan, “Multi-view Harmonized Bilinear Network for 3D Object Recognition,” in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR’18)*, 2018 (*Spotlight*)
8. Lihao Ge, Junwu Weng, Yujun Cai, Junsong Yuan, “Hand PointNet: 3D Hand Pose Estimation using Point Sets,” in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR’18)*, 2018 (*Spotlight*)
9. Mengyuan Liu and Junsong Yuan, “Recognizing Human Actions as Evolution of Pose Estimation Maps,” in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR’18)*, 2018
10. Weixiang Hong, Zhenzhen Wang, Ming Yang, and Junsong Yuan, “Conditional Generative Adversarial Network for Structured Domain Adaptation,” in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR’18)*, 2018
11. Shizheng Wang, Wenjuan Liao, Phil Surman, Zhigang Tu, Yuanjin Zheng and Junsong Yuan, “Salience Guided Depth Calibration for Perceptually Optimized Compressive Light Field 3D Display,” in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR’18)*, 2018
12. Shanxin Yuan, Guillermo Garcia-Hernando, Bjorn Stenger, Tae-Kyun Kim, Gyeongsik Moon, Ju Yong Chang, Kyoung Mu Lee, Pavlo Molchanov, Lihao Ge, Junsong Yuan, Xinghao Chen, Guijin Wang, Fan Yang, Kai Akiyama, Yang Wu, Qingfu Wan, Meysam Madadi, Sergio Escalera, Shile Li, Dongheui Lee, Iason Oikonomidis, Antonis Argyros, “3D Hand Pose Estimation: From Current Achievements to Future Goals,” in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR’18)*, 2018
13. Chen Wang, Le Zhang, Lihua Xie, and Junsong Yuan, “Kernel Cross-Correlator,” in *Proc. AAAI Conference on Artificial Intelligence (AAAI’18)*, 2018
14. Weixiang Hong, Jingjing Meng, and Junsong Yuan, “Tensorized Projection for High-Dimensional Binary Embedding,” in *Proc. AAAI Conference on Artificial Intelligence (AAAI’18)*, 2018
15. Weixiang Hong, Jingjing Meng, Junsong Yuan, and Xueyan Tang, “Distributed Composite Quantization,” in *Proc. AAAI Conference on Artificial Intelligence (AAAI’18)*, 2018 (*Oral*)
16. Jing Tang, Xueyan Tang, Xiaokui Xiao, and Junsong Yuan, “Online Processing Algorithms for Influence Maximization,” in *Proc. of the ACM SIGMOD International Conference on Management of Data (SIGMOD)*, 2018

17. Jing Tang, Xueyan Tan, and Junsong Yuan, "Towards Profit Maximization for Online Social Network Providers," *IEEE Conf. on Computer Communications* (INFOCOM'18), 2018
18. Chunluan Zhou and Junsong Yuan, "Multi-label Learning of Part Detectors for Heavily Occluded Pedestrian Detection," in *Proc. Int'l Conf. on Computer Vision* (ICCV'17), 2017
19. Jiong Yang and Junsong Yuan, "Common Action Discovery and Localization in Unconstrained Videos," in *Proc. Int'l Conf. on Computer Vision* (ICCV'17), 2017
20. Tan Yu, Zhenzhen Wang, and Junsong Yuan, "Compressive Quantization for Fast Object Instance Search in Videos," in *Proc. Int'l Conf. on Computer Vision* (ICCV'17), 2017
21. Lihao Ge, Hui Liang, Junsong Yuan, and Daniel Thalmann, "3D Convolutional Neural Networks for Efficient and Robust Hand Pose Estimation from Single Depth Images," in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition* (CVPR'17), 2017
22. Tan Yu, Yuwei Wu, and Junsong Yuan, "HOPE: Hierarchical Object Prototype Encoding for Efficient Object Instance Search in Videos," in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition* (CVPR'17), 2017
23. Junwu Weng, Chaoqun Weng, and Junsong Yuan, "Spatio-Temporal Naive-Bayes Nearest-Neighbor (ST-NBNN) for Skeleton-based Action Recognition," in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition* (CVPR'17), 2017
24. Weixiang Hong, Junsong Yuan, and Das Bhattacharjee Sreyasee, "Fried Binary Embedding for High-Dimensional Visual Features," in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition* (CVPR'17), 2017
25. Jerripothula Koteswar, Jianfei Cai, Jiangbo Lu, and Junsong Yuan, "Object Co-skeletonization with Co-segmentation," in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition* (CVPR'17), 2017
26. Tan Yu, Jingjing Meng, and Junsong Yuan, "Is my object in this video?: Reconstruction-based object instance search in videos," in *Proc. International Joint Conference on Artificial Intelligence* (IJCAI'17), 2017
27. Tan Yu, Yuwei Wu, Das Bhattacharjee Sreyasee, and Junsong Yuan, "Efficient Object Instance Search Using Fuzzy Object Matching," in *Proc. AAAI Conference on Artificial Intelligence* (AAAI'17), 2017
28. Jiaqi Zhang, Zhenzhen Wang, Junsong Yuan, and Yap-Peng Tan, "Positive and Unlabeled (PU) Learning for Anomaly Detection with Multi-features," in *Proc. ACM Int'l Conf. on Multimedia* (MM'17), 2017 (full paper)
29. Jingjing Meng, Hongxing Wang, Junsong Yuan, Yap-Peng Tan, "From Keyframes to Key Objects: Video Summarization by Representative Object Proposal Selection," in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition* (CVPR'16), 2016
30. Lihao Ge, Hui Liang and Junsong Yuan, Daniel Thalmann, "Robust 3D Hand Pose Estimation in Single Depth Images: from Single-View CNN to Multi-View CNNs," in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition* (CVPR'16), 2016
31. Jerripothula Koteswar, Jianfei Cai, and Junsong Yuan, "CATS: Co-saliency Activated Tracklet Selection for Video Co-localization", in *Proc. European Conf. on Computer Vision* (ECCV'16), 2016
32. Zhe Wang, Lingyu Duan, Junsong Yuan, Tiejun Huang, Wen Gao, "To Project More or to Quantize More: Minimize Reconstruction Bias for Learning Compact Binary Codes," in *Proc. International Joint Conference on Artificial Intelligence* (IJCAI'16), 2016
33. Das Bhattacharjee Sreyasee, Junsong Yuan, Weixiang Hong, and Xiang Ruan, "Query Adaptive Instance Search using Object Sketches," in *Proc. ACM Int'l Conf. on Multimedia* (MM'16), 2016 (full paper)

34. Kang Dang, Jiong Yang, and Junsong Yuan, "Adaptive Exponential Smoothing for Online Filtering of Pixel Prediction Maps," in *Proc. Int'l Conf. on Computer Vision (ICCV'15)*, 2015
35. Gang Yu and Junsong Yuan, "Fast Action Proposals for Human Action Detection and Search," in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR'15)*, 2015
36. Hongxing Wang, Chaoqun Weng, and Junsong Yuan, "Multi-feature Spectral Clustering with Minimax Optimization," in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR'14)*, 2014
37. Gangqiang Zhao, Junsong Yuan, and Gang Hua, "Topical Video Object Discovery from Key Frames by Modeling Word Co-occurrence Prior", in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR'13)*, 2013
38. Tran Du and Junsong Yuan, "Max-Margin Structured Output Regression for Spatio-Temporal Action Localization", in *Proc. Advances Neural Information Processing Systems (NIPS'12)*, 2012
39. Yuning Jiang, Junsong Yuan and Gang Yu, "Randomized Spatial Partition for Scene Recognition", in *Proc. European Conf. on Computer Vision (ECCV'12)*, 2012
40. Gang Yu, Junsong Yuan, and Zicheng Liu, "Propagative Hough Voting for Human Activity Recognition", in *Proc. European Conf. on Computer Vision (ECCV'12)*, 2012
41. Yuning Jiang, Jingjing Meng, and Junsong Yuan, "Randomized Visual Phrases for Object Search", in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR'12)*, 2012
42. Jiang Wang, Zicheng Liu, Ying Wu, and Junsong Yuan, "Mining Actionlet Ensemble for Action Recognition with Depth Cameras", in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR'12)*, 2012
43. Zhou Ren, Junsong Yuan, Chunyuan Li, and Wenyu Liu, "Minimum Near-Convex Decomposition for Robust Shape Representation", in *Proc. Int'l Conf. on Computer Vision (ICCV'11)*, 2011
44. Junsong Yuan, Ming Yang, and Ying Wu, "Mining Discriminative Co-occurrence Patterns for Visual Recognition", in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR'11)*, pp. 2777-2784, 2011
45. Tran Du and Junsong Yuan, "Optimal Spatio-Temporal Path Discovery for Video Event Detection", in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR'11)*, pp. 3321-3328, 2011
46. Yang Cong, Junsong Yuan and Ji Liu, "Sparse Reconstruction Cost for Abnormal Event Detection", in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR'11)*, pp. 3449-3456, 2011
47. Gang Yu, Junsong Yuan, and Zicheng Liu, "Unsupervised Random Forest Voting for Fast Action Search", in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR'11)*, pp. 865-872, 2011
48. Jiang Xu, Junsong Yuan and Ying Wu, "Multimodal Partial Estimates Fusion", in *Proc. Int'l Conf. on Computer Vision (ICCV'09)*, pp. 2177-2184, 2009
49. Junsong Yuan, Zicheng Liu and Ying Wu, "Discriminative Subvolume Search for Efficient Action Detection", in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR'09)*, pp. 2442-2449, 2009 (**CVPR'09 Best Doctoral Spotlight Award**).
50. Junsong Yuan and Ying Wu, "Context-aware clustering", in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR'08)*, 2008
51. Junsong Yuan, Jiebo Luo and Ying Wu, "Mining compositional features for boosting", in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR'08)*, 2008

52. Junsong Yuan and Ying Wu, "Spatial random partition for common visual pattern discovery", in *Proc. Int'l Conf. on Computer Vision (ICCV'07)*, pp.1-8, 2007
53. Junsong Yuan, Ying Wu and Ming Yang, "Discovery of Collocation Patterns: from Visual Words to Visual Phrases," in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR'07)*, 2007
54. Ming Yang, Junsong Yuan and Ying Wu, "Spatial selection for attentional visual tracking," in *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR'07)*, 2007
55. Junsong Yuan, Ying Wu and Ming Yang, "From Frequent Itemsets To Semantically Meaningful Visual Patterns", in *Proc. ACM Int'l Conf. on Knowledge Discovery and Data Mining (SIGKDD'07)*, pp.864-873, 2007 (*oral*)

*Part II: Papers in Image/Video/Vision/Multimedia/Graphics

56. Kang Dang, Chunluan Zhou, Zhigang Tu, Michael Hoy, Justin Dauwels, Junsong Yuan, "Actor-Action Semantic Segmentation with Region Masks," *British Conf. on Machine Vision (BMVC) 2018*
57. Yanjun Zhu, Gang Yu, Junsong Yuan, Kai-Kuang Ma, "Selecting Informative Frames for Action Recognition with Partial Observations," *Proc. IEEE Conf. on Image Processing (ICIP'18)*, 2018 (*oral*)
58. Mengjia Yan and Junsong Yuan, "3D Convolutional Generative Adversarial Networks for Detecting Temporal Irregularities in Videos," *International Conf. on Pattern Recognition (ICPR'18)*, 2018
59. Zhenzhen Wang and Junsong Yuan, "Unsupervised Multiple-Instance Learning for Instance Search," in *IEEE Conf. on Multimedia Expo (ICME'18)*, 2018
60. Zhiwen Fang, Junsong Yuan, and Nadia Thalmann, "Understanding Human-Object Interaction in RGB-D videos for Human Robot Interaction," *Computer Graphics International (CGI'18)*, 2018
61. Chen Wang, Junsong Yuan, and Lihua Xie, "Non-Iterative SLAM," *International Conference on Advanced Robotics, (ICAR'17)*, 2017 (**best paper award**)
62. Jianyu Yang, Chen Zhu, and Junsong Yuan, "Real Time Hand Gesture Recognition via Finger-Emphasized Multi-Scale Description," *IEEE Conf. on Multimedia Expo (ICME'17)*, 2017
63. Das Sreyasee, Junsong Yuan, Jiaqi Zhang, and Yap-Peng Tan, "Context-Aware Graph-Based Analysis for Detecting Anomalous Activities," *IEEE Conf. on Multimedia Expo (ICME'17)*, 2017
64. Rui Zhong, Shizheng Wang, Bruno Cornelis, Yuanjing Zheng, Junsong Yuan, and Adrian Munteanu, "Efficient Directional and L1-optimized Intra-Prediction for Light Field Images," *Proc. IEEE Conf. on Image Processing (ICIP'17)*, 2017 (*oral*)
65. Jiong Yang and Junsong Yuan, "Temporally Enhanced Image Object Proposals for Videos," in *IEEE Conf. on Multimedia Expo (ICME'17)*, 2017 (*oral*)
66. Jing Tang, Xueyan Tang, and Junsong Yuan, "Influence Maximization Meets Efficiency and Effectiveness: A Hop-Based Approach," *IEEE/ACM International Conference on Social Networks Analysis and Mining (ASONAM'17)*, 2017 (*oral*)
67. Michael Colin Hoy, Justin Dauwels, and Junsong Yuan, "Efficient Tracking of Closely Spaced Objects in Depth Data using Sequential Dirichlet Process Clustering," *IEEE Intelligent Vehicles Symposium (IV'17)*, 2017
68. Michael Colin Hoy, Justin Dauwels, and Junsong Yuan, "Efficient Ground Object Segmentation in 3D LIDAR Based on Cascaded Mode Seeking," *IEEE Intelligent Transportation Systems Conference (ITSC'17)*, 2017

69. Jingjing Meng, Suchen Wang, Hongxing Wang, Yap-Peng Tan, and Junsong Yuan, "Video Summarization via Multi-view Representative Selection," *Intl. Conf. on Computer Vision Workshop (ICCVW)*, 2017
70. Zhenzhen Wang, Jingjing Meng, Tan Yu, and Junsong Yuan, "Common Visual Pattern Discovery and Search," *Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC)*, 2017
71. Kang Dang, Michael Colin Hoy, Justin Dauwels, and Junsong Yuan, "Real-time Hierarchical Fusion System for Semantic Segmentation in Offroad Scenes," *Proc. 20th Int'l. Conf. on Information Fusion (FUSION'17)*, 2017
72. Ruibing Jin, Bojan Andonovski, Zhigang Tu, Jianliang Wang, Junsong yuan, Desmond Mark Tham, "A framework based on deep learning and mathematical morphology for cabin door detection in an automated aerobridge docking system," *Proc. Asian Control Conference (ACC'17)*, 2017
73. Zhao Liu, Yuwei Wu, Junsong Yuan, and Yap-Peng Tan, "Learning A Multi-class Discriminative Dictionary with Nonredundancy Constraints for Visual Classification," in *Proc. ACM Int'l Conf. on Multimedia (MM'16)*, 2016 (*short paper*)
74. Yuwei Wu, Zhe Wang, Junsong Yuan, and Lingyu Duan, "A Compact Binary Aggregated Descriptor via Dual Selection for Visual Search," in *Proc. ACM Int'l Conf. on Multimedia (MM'16)*, 2016 (*short paper*)
75. Hui Liang, Junhui Hou, Junsong Yuan, and Daniel Thalmann, "Random Forest with Suppressed Leaves for Hough Voting," *Proc. Asian Conf. on Computer Vision (ACCV'16)*, 2016
76. Chunlun Zhou and Junsong Yuan, "Learning to integrate Occlusion-specific Detectors for Heavily Occluded Pedestrian Detection," *Proc. Asian Conf. on Computer Vision (ACCV'16)*, 2016
77. Hui Liang, Jin Wang, Qian Sun, Yong-Jin Liu, Junsong Yuan, Jun Luo, Ying He, "Barehanded Music: Real-time Hand Interaction for Virtual Piano," *ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games (I3D'16)*, 2016 (*oral*)
78. Jing Tang, Xueyan Tang, and Junsong Yuan, "Profit Maximization for Viral Marketing in Online Social Networks," *IEEE International Conf. on Network Protocols (ICNP'16)*, 2016 (*oral*)
79. Junlin Hu, Jiwen Lu, Junsong Yuan, and Yap-Peng Tan, "Collaborative Multi-View Metric Learning for Visual Classification," *IEEE Conf. on Multimedia Expo (ICME'16)*, 2016
80. Haoran Xu, Jianyu Yang, Junsong Yuan, "Invariant Multi-Scale Shape Descriptor for Object Matching and Recognition," *Proc. IEEE Conf. on Image Processing (ICIP'16)*, 2016 (*oral*)
81. Jianfeng Ren, Xudong Jiang, and Junsong Yuan, "Sound-Event Classification Using Pseudo-Color CENTRIST Feature and Classifier Selection," *1st International Workshop on Pattern Recognition (IWPR'16)*, 2016 (*oral*)
82. Rui Zhong, Shizheng Wang, Bruno Cornelis, Yuanjin Zheng, Junsong Yuan, and Adrian Munteanu, "L1-optimized linear prediction for light field image compression," *Picture Coding Symposium (PCS'16)*, 2016 (*oral*)
83. Philip Anthony Surman, Shizheng Wang, Kien Seng Ong, Xiaowei Sun, Junsong Yuan, Yuanjin Zheng, "Multi-Layer Light Field Display Characterization", 3DTV-CON 2016 (*oral*)
84. Wenjuan Liao, Shizheng Wang, Mingyu Sun, Phil Surman, Yuanjin Zheng, Junsong Yuan, and Xiao Wei Sun, "Perceptually Optimized Dual-layer Light Field 3D Display Using A Moire-aware Compressive Factorization," *SID Symposium Digest of Technical Papers*, 2016 (*oral*)
85. Michael Hoy, Chaoqun Weng, Junsong Yuan and Justin Dauwels, "Bayesian Tracking of Multiple Objects with Vision and Radar," *Proc. International Conference on Control, Automation, Robotics and Vision (ICARCV'16)*, 2016

86. Jing Tang, Xueyan Tang, Junsong Yuan, "Optimizing Inter-Server Communication for Online Social Networks", in *Proc. IEEE Conf. on Distributed Computing Systems (ICDCS'15)*, 2015 (*oral*)
87. Hui Liang, Junsong Yuan, Daniel Thalmann and Nadia Thalmann, "AR in Hand: Egocentric Palm Pose Tracking and Gesture Recognition for Augmented Reality Applications", in *Proc. ACM Int'l Conf. on Multimedia (MM'15)*, 2015 (*demo paper*)
88. Jerripothula Koteswar, Jianfei Cai, and Junsong Yuan, "QCCE: Quality Constrained Co-saliency Estimation for Common Object Detection," *Proc. IEEE Conf. on Visual Communication and Image Processing (VCIP'15)*, 2015 (*oral*)
89. Shizheng Wang, Zhenfeng Zhuang, Phil Surman, Junsong Yuan, Yuanjin Zheng, Xiao Wei Sun, "Two-layer Optimized Light Field Display Using Depth Initialization," *Proc. IEEE Conf. on Visual Communication and Image Processing (VCIP'15)*, 2015 (*oral*)
90. Shizheng Wang, Xiangyu Zhang, Qijia Cheng, Rajendran Kaviya, Phil Surman, Junsong Yuan, Xiao Wei Sun, "Glasses-free Light Field 3D Display," *Proc. IEEE Conf. on Visual Communication and Image Processing (VCIP'15)*, 2015
91. Jingjing Meng, Junsong Yuan, Gang Wang and Yap-Peng Tan, "Fast Object Instance Search in Videos From One Example", *Proc. IEEE Conf. on Image Processing (ICIP'15)*, 2015
92. Jerripothula Koteswar, Jianfei Cai, and Junsong Yuan, "Group saliency propagation for large scale and quick image co-segmentation", *Proc. IEEE Conf. on Image Processing (ICIP'15)*, 2015 (*oral*)
93. Hui Liang, Junsong Yuan, and Daniel Thalmann, "Egocentric Hand Pose Estimation and Distance Recovery in a Single RGB Image," *Proc. IEEE Conf. on Multimedia Expo (ICME'15)*, 2015
94. Shizheng Wang, Mingyu Sun, Phil Surman, Junsong Yuan, and Xiao Wei Sun, "Maximizing the 2D Viewing Field of a Computational Two-layer 3D Display", *SID Symposium Digest of Technical Papers*, 2015
95. Jianyu Yang, Junsong Yuan, Youfu Li, "Flexible Trajectory Indexing for 3D Motion Recognition", in *Proc. IEEE Winter Conference on Applications of Computer Vision (WACV'15)*, 2015
96. Jianfeng Ren, Xudong Jiang, and Junsong Yuan, "Quantized Fuzzy LBP for Face Recognition", in *IEEE Intl. Conf. on Acoustics, Speech, and Signal Processing (ICASSP'15)*, 2015
97. Daniel Thalmann, Hui Liang, Junsong Yuan, "First-Person Palm Pose Tracking and Gesture Recognition in Augmented Reality," in *10th Intl. Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Application (VISIGRAPP)*, 2015
98. Das Bhattacharjee Sreyasee, Junsong Yuan, Lingyu Duan and Yap-Peng Tan, "Query-adaptive Logo Search using Shape-aware Descriptors", in *Proc. ACM Int'l Conf. on Multimedia (MM'15)*, 2015 (*short paper*)
99. Hong Zhang, Junsong Yuan, Xingyu Gao, and Zhenyu Chen, "Boosting Cross-media Retrieval via Visual-Auditory Feature Analysis and Relevance Feedback", in *Proc. ACM Int'l Conf. on Multimedia (MM'14)*, 2014 (*short paper*)
100. Zerrin Yumak, Jianfeng Ren, Nadia Magnenat Thalmann, Junsong Yuan, "Tracking and fusion for multiparty interaction with a virtual character and a social robot," *SIGGRAPH Asia Workshop on Autonomous Virtual Humans and Social Robot for Telepresence*, 2014 (*oral*)
101. Yang Xiao, Gangqiang Zhao, Junsong Yuan, Daniel Thalmann, "Activity recognition in unconstrained RGB-D video using 3D trajectories," *SIGGRAPH Asia Workshop on Autonomous Virtual Humans and Social Robot for Telepresence*, 2014 (*oral*)
102. Kang Dang and Junsong Yuan, "Location Constrained Pixel Classifiers for Image Parsing with Regular Spatial Layout," in *Proc. British Machine Vision Conference (BMVC'14)*, 2014

103. Chunluan Zhou and Junsong Yuan, "Non-rectangular Part Discovery for Object Detection," in *Proc. British Machine Vision Conference (BMVC'14)*, 2014
104. Gangqiang Zhao, Junsong Yuan, and Kang Dang, "Height Gradient Histogram (HIGH) for 3D Scene Labelling," in *Proc. International Conf. on 3D Vision (3DVision'14)*, 2014
105. Gang Yu, Zicheng Liu, and Junsong Yuan, "Discriminative Orderlet Mining For Real-time Recognition of Human-Object Interaction" in *Proc. Asian Conf. on Computer Vision (ACCV'14)*, 2014
106. Junlin Hu, Jiwen Lu, Junsong Yuan, and Yap-Peng Tan, "Large Margin Multi-Metric Learning for Face and Kinship Verification in the Wild" in *Proc. Asian Conf. on Computer Vision (ACCV'14)*, 2014
107. Xinchun Yan, Junsong Yuan, and Hui Liang, "Efficient Online Spatio-Temporal Filtering for Video Event Detection" in *Proc. European Conf. on Computer Vision Workshop (ECCVW) on Video Event Categorization, Tagging and Retrieval towards big data, 2014 (oral)*
108. Hong Zhang, Li Chen, Jun Liu, and Junsong Yuan, "Hierarchical Multi-feature Fusion for Multimodal Data Analysis", in *Proc. IEEE Conf. on Image Processing (ICIP'14)*, 2014
109. Jerripothula Koteswar, Jianfei Cai, Fanman Meng, and Junsong Yuan, "Automatic Image Co-Segmentation using Geometric Mean Saliency", in *Proc. IEEE Conf. on Image Processing (ICIP'14)*, 2014 (**Top 10% paper**)
110. Hui Liang, Junsong Yuan, and Daniel Thalmann, "Improved Hand Pose Estimation via Multimodal Prediction Fusion," in *Prof. Computer Graphics International (CGI'14)*, 2014
111. Gang Yu and Junsong Yuan, "Scalable Forest Hashing for Fast Similarity Search," in *Proc. IEEE Conf. on Multimedia Expo (ICME'14)*, 2014
112. Ye Luo, Gangqiang Zhao, and Junsong Yuan, "Thematic Saliency Detection using Spatial-Temporal Context", in *Proc. Int'l Conf. on Computer Vision Workshop (ICCVW'13) on Large-Scale Video Search and Mining (LSVSM)*, 2013 (*oral*)
113. Yang Xiao, Junsong Yuan, Daniel Thalmann, "Human-Virtual Human Interaction by Upper Body Gesture Understanding", in *ACM Symposium on Virtual Reality Software and Technology (VRST'13)*, 2013 (*oral*)
114. Jingjing Meng, Junsong Yuan, Gang Wang, Jianbo Xu, "Object Instance Search in Videos," in *Proc. Intl. Conf. on Information, Communication and Signal Processing (ICICS'13)*, 2013 (*oral*)
115. Kang Dang, Junsong Yuan, and Ho Yee Tiong, "Voxel Labelling in CT Images using Data-Driven Contextual Features", in *Proc. IEEE Conf. on Image Processing (ICIP'13)*, 2013 (**Top 10% paper**)
116. Jianfeng Ren, Xudong Jiang, and Junsong Yuan, "Learning Binarized Pixel-Difference Pattern for Scene Recognition", in *Proc. IEEE Conf. on Image Processing (ICIP'13)*, 2013 (*oral*)
117. Jianfeng Ren, Xudong Jiang, Junsong Yuan, "Relaxed Local Ternary Pattern for Face Recognition", in *Proc. IEEE Conf. on Image Processing (ICIP'13)*, 2013
118. Chaoqun Weng, Hongxing Wang, and Junsong Yuan, "Learning Weighted Geometric Pooling for Image Classification", in *Proc. IEEE Conf. on Image Processing (ICIP'13)*, 2013
119. Hui Liang, Junsong Yuan, and Daniel Thalmann, "Model-based Hand Pose Estimation via Spatial-temporal Hand Parsing and 3D Fingertip Localization," in *Computer Graphics International, (CGI'13)*, 2013 (*oral*)
120. Chaoqun Weng, Yuning Jiang, and Junsong Yuan, "Direct Mining Co-occurrence Features for Visual Recognition: a Branch and Bound Method", in *Proc. IEEE Conf. on Multimedia Expo (ICME'13)*, 2013 (*oral, acceptance rate [15%]*)

121. Chaoqun Weng, Hongxing Wang, and Junsong Yuan, "Hierarchical Sparse Coding based on Spatial Pooling and Multi-feature Fusion", in *Proc. IEEE Conf. on Multimedia Expo (ICME'13)*, 2013
122. Jianfeng Ren, Xudong Jiang, and Junsong Yuan, "Dynamic Texture Recognition Using Enhanced LBP Features", in *IEEE Intl. Conf. on Acoustics, Speech, and Signal Processing (ICASSP'13)*, 2013
123. Wen Gao, Ling-Yu Duan, Jun Sun, Junsong Yuan, Yonggang Wen, Jianfei Cai, Alex C. Kot, "Mobile Media Communication, Processing, and Analysis: a review of recent advances", in *IEEE International Symposium on Circuits and Systems (ISCAS'13)*, 2013 (*oral*)
124. Ye Luo and Junsong Yuan, "Salient Object Detection in Videos by Optimal Spatio-Temporal Path Discovery", in *Proc. ACM Int'l Conf. on Multimedia (MM'13)*, 2013 (*short paper*)
125. Gang Yu, Junsong Yuan, and Zicheng Liu, "Predicting Human Activities using Spatio-Temporal Structure of Interest Points", in *Proc. ACM Int'l Conf. on Multimedia (MM'12)*, 2012 (*short paper*)
126. Hui Liang, Junsong Yuan and Daniel Thalmann, "3D Fingertip and Palm Tracking in Depth Image Sequences", in *Proc. ACM Int'l Conf. on Multimedia (MM'12)*, 2012 (*short paper*)
127. Chunlun Zhou and Junsong Yuan, "Arbitrary-Shape Object Localization using Adaptive Image Grids", in *Proc. Asian Conf. on Computer Vision (ACCV'12)*, 2012
128. Jiang Wang, Junsong Yuan, Zhuoyuan Chen, and Ying Wu, "Spatial Locality-Aware Sparse Coding and Dictionary Learning", in *Proc. Asian Conf. on Machine Learning (ACML'12)*, 2012 (*oral*)
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137. Hongxing Wang, Junsong Yuan, Yap-Peng Tan, "Combining Feature Context and Spatial Context for Image Data Mining", in *Proc. IEEE Conf. on Data Mining (ICDM'11)*, 2011 (*regular paper*)
138. Gangqiang Zhao and Junsong Yuan, "Discovering Thematic Patterns in Videos via Cohesive Sub-graph Mining", in *Proc. IEEE Conf. on Data Mining (ICDM'11)*, 2011 (*short paper*)

139. Jianfeng Ren, Xudong Jiang, and Junsong Yuan, "A Fast and Accurate Cascade Subspace Face/Eye Detector on Mobile Devices", in *Proc. Int'l Conf. on Computer Vision Workshop (ICCVW'11) on mobile vision*, 2011 (*oral*)
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165. Ling-Yu Duan, Junsong Yuan, Qi Tian and Changsheng Xu, "Fast and Robust Short Video Clip Search Using an Index Structure," in *Proc. of ACM Int'l Conf. on Multimedia (MM'04)*, pp.756-757, 2004. (*demonstration*)

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3. Xiaowei Sun, Shizheng Wang, Jiew Siew Lim, Junsong Yuan, Philip Anthony Surman, "Head Tracked Multiview 3D Display," Singapore provisional patent, Filed 04/2015
4. Junsong Yuan and Hui Liang, "Estimating the hand pose using a single RGB camera", Singapore provisional patent, Filed 09/2014.
5. Junsong Yuan, Yuning Jiang and Jingjing Meng, "System and method For large scale visual object search", US provisional patent, Filed 05/2012.
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8. Jiebo Luo and Junsong Yuan, "Image classification using capture-location-sequence information", US Patent issued, US 8,055,081 B2, Filed 04/14/2008, Issued 11/08/2011.

9. Junsong Yuan, Wei Wang, Zhu Li and Dongge Li, "Method and apparatus for video clip searching and mining", US Patent pending, US 2008/0226173 A1, Filed 03/13/2007.

MEMBERSHIP

Fellow, International Association of Pattern Recognition (IAPR), 2018
Senior Member, Institute of Electrical and Electronics Engineers (IEEE), 2014 - present
Member, IEEE Conf. on Multimedia (ICME) Steering Committee, 2018-2019
Member, IEEE Multimedia System and Applications Technical Committee, 2014 - 2022
Member, IEEE Visual Signal Processing and Communications Technical Committee, 2014 - 2022

SERVICE FOR
REFEREED
JOURNALS

Senior Area Editor, Journal of Visual Communications and Image Processing (JVCI), 2018 - present
Associate Editor, IEEE Transactions on Image Processing (T-IP), 2016 - present
Associate Editor, IEEE Trans. on Circuits and Systems for Video Technology (T-CSVT), 2016 - present
Associate Editor, The Visual Computer Journal (TVC), 2013 - present
Associate Editor, IPSJ Trans. on Computer Vision and Applications (CVA), 2015 - 2017
Guest Editor⁷, International Journal of Computer Vision (IJCV), 2014-2015

SERVICE FOR
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Technical Program Co-Chair
IEEE Conference on Multimedia Expo (ICME'18)
IEEE Conference on Visual Communications and Image Processing (VCIP'15)

Workshop Co-Chair

IEEE CVPR 2015 Workshop on Large-scale video search and mining (LSVSM'15)
SIGGRAPH Asia 2014 Workshop on Autonomous Virtual Humans and Social Robot for Telepresence
IEEE ICCV 2013 Workshop on Large-scale video search and mining (LSVSM'13)
IEEE CVPR 2013 Workshop on Human action understanding from 3D data (HAU3D'13)
IEEE CVPR 2012 Workshop on Human action understanding from 3D data (HAU3D'12)
IEEE CVPR 2012 Workshop on Large-scale video search and mining (LSVSM'12)

Organizing Co-Chair

Asian Conf. on Computer Vision (ACCV'14)

Area Chair

ACM Conf. on Multimedia (ACM MM'18)
IEEE Conf. on Computer Vision and Pattern Recognition (CVPR'17'19)
IEEE Conf. on Image Processing (ICIP'17'18)
International Conf. on Pattern Recognition (ICPR'16'18)
Asian Conference on Computer Vision (ACCV'14'18)
IEEE Winter Conference on Applications and Computer Vision (WACV'14'19)
IEEE Conference on Multimedia Expo (ICME'14'15)

Tutorial Chair

ACM Conference on Multimedia Retrieval (ICMR'15)

Publication Co-Chair

IEEE Conf. on Multimedia Expo (ICME'16)

Web Chair

IEEE Conf. on Computer Vision and Pattern Recognition (CVPR'17)

⁷Special Issue on Human Activity Understanding from 2D and 3D Data

Senior Program Committee Member

International Joint Conference on Artificial Intelligence (IJCAI'18)

Program Committee Member

IEEE Conf. on Computer Vision and Pattern Recognition (CVPR'11-'18)

International Conference on Computer Vision (ICCV'09'11'13'15'17)

European Conf. on Computer Vision (ECCV'14'16)

IEEE Winter Conference on Applications and Computer Vision (WACV'14'15)

International Joint Conference on Artificial Intelligence (IJCAI'13)

ACM Multimedia (ACM MM'10'12'13'15'17)

SIGGRAPH Asia Technical Briefs program (SIGGRAPH Asia'12)

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Sheng Liu (Ph.D. of UB, expected 2022)

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Yujun Cai (Ph.D. of NTU, expected 2021)

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Junwu Weng (Ph.D. of NTU, expected 2019)

Tan Yu (Ph.D., expected 2019)

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Microsoft Research Asia Fellowship 2011

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Zhou Ren (M.Eng. of NTU, 2012)
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now: Researcher at Tencent, Shenzhen, China

Dr. Zhigang Tu (Post-Doc research fellow, Dec. 2016 - March 2018)
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Chinese Academy of Science Hundred Talents Program (category C)

Dr. Anirban Chakraborty (Post-Doc research fellow, Nov. 2015 - Dec. 2016)
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Dr. Das Bhattacharjee Sreyasee (Post-Doc research fellow, Aug. 2014 - Nov. 2016)
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Dr. Jianfeng Ren (Research Associate, Aug. 2010 - July 2015)
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Dr. Jianyu Yang (Post-Doc research fellow, Jan. 2015 - July 2015)

now: Associate Professor at Soochow University, Suzhou, China

Dr. Gangqiang Zhao (Post-Doc research fellow, March 2010 - Sept. 2014)
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Dr. Du Tran (Research Associate, April 2010 - July 2012)
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Dr. Yang Cong (Post-Doc research fellow, May 2010 - April 2011)
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Dr. Zhenzhong Chen (senior research scientist, Sept. 2011 - March 2012)
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1000Plan Professorship for Young Talents

KEYNOTES AND TUTORIALS

Keynote: Towards More Intelligent Machines: Understanding Human Behaviours with 2D and 3D Sensors

International Conference on Internet Multimedia Computing and Services (ICIMCS), Aug. 2018

Tutorial: Mining Image and Video Data (with Prof. Ying Wu)
Asian Conf. on Computer Vision (ACCV'14), Singapore, Nov. 2014

Tutorial: Mining Image and Video Data
IEEE Conf. on Image Processing (ICIP'13), Melbourne, Australia, Sept. 2013

Tutorial: Understanding human actions with 2D and 3D sensors (with Dr. Zicheng Liu)
IEEE Conf. on Automatic Face and Gesture Recognition (FG'13), Shanghai, China, April 2013

Tutorial: Social Robots and Virtual Humans in 3D TelePresence (with Prof. Nadia Thalmann and Prof. Daniel Thalmann)
SIGGRAPH Intl. Conf. on Virtual-Reality Continuum and its Applications in Industry (VRCAI'12), Singapore, Dec. 2012

Tutorial: Human action analysis with 2D and 3D sensors (with Dr. Zicheng Liu)
IEEE Conf. on Multimedia Expo (ICME'12), Melbourne, Australia, July 2012

SERVICES AT NTU

Senate of the University (50 members in total), July 2016 - March 2018

NTU Research Council member for Informatics and Mathematics, Dec. 2015 - March 2018

Program director of video analytics, School of EEE, Oct. 2011 - Sept. 2016